

APPENDIX K

Oil and Gas

Appendix K contains three separate sections, as follows:

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Appendix K.1

Oil and Gas Lease Stipulations and Conditions of Approval

This section of Appendix K provides the stipulations and conditions of approval that apply or would be applied to the oil and gas leases in the Monument under each alternative.

Alternative A (Current Management) – Oil and Gas Lease Stipulations

West HiLine Oil and Gas Leases (12 Leases)

Twelve oil and gas leases were issued under the West HiLine Resource Management Plan (RMP) (Table K.1-1). These oil and gas leases include stipulations for a variety of resources should they be present on the lease during the permitting process (see Attachment K.1-1). The stipulations include: seasonal or distance restrictions to protect sage-grouse nesting areas, sage-grouse winter habitat, and big game crucial winter range; controlled surface use to protect soils and visual resources; no surface occupancy to protect sage-grouse leks, designated sensitive species and streams and riparian/wetland areas. A notice is used to inform lessees and operators of the requirements for cultural resource historic preservation compliance.

Non-West HiLine Oil and Gas Leases (31 Leases)

Two oil and gas leases were issued with stipulations for a variety of resources, which are the same as those attached to the West HiLine leases (see Table K.1-1 and Attachment K.1-1).

Three oil and gas leases were issued with reasonable requirements/conditions for soil erosion, air and water pollution, and unnecessary damage to the surface vegetation. The stipulations also included no occupancy of the surface within specific distances from improved roads, highways, trails, and water sources (lakes, ponds, reservoirs, and springs) (see Table K.1-1 and Attachments K.1-2 and K.1-3).

Twenty-six oil and gas leases were issued without stipulations (see Table K.1-1).

Conditions of Approval

During the permitting process for applications for permits to drill (APDs), conditions of approval may also be applied

to surface-disturbing activities consistent with the lease rights (Table 2.21, Chapter 2). These conditions would be considered on a case-by-case basis during the well onsite visit and review of the APD.

Alternative B – Oil and Gas Conditions of Approval

In addition to the oil and gas lease stipulations addressed under Alternative A, the following conditions of approval would be applied to APDs on lease acreage in the Monument. (See Table K.1-2 at the end of this section.)

No Surface Disturbance

Resource: Wildlife – Greater Sage-Grouse Leks

Condition of Approval: Surface disturbance is prohibited within 1/4 mile of sage-grouse leks.

Objective: To protect sage-grouse lek sites necessary for the long-term maintenance of grouse populations in the area.

Exception: An exception to this condition may be granted by the authorized officer if the operator submits a plan which demonstrates that impacts from the proposed action are acceptable or can be adequately mitigated.

Modification: The boundaries of the affected area may be modified if the authorized officer determines that portions of the area can be occupied without adversely affecting sage-grouse lek sites.

Waiver: This condition may be waived if the authorized officer determines that the affected area can be occupied without adversely affecting sage-grouse lek sites, or if all lek sites within 1/4 mile of the area have not been used for 5 consecutive years.

Timing

Resource: Wildlife – Greater Sage-Grouse Nesting Zone

Condition of Approval: Surface disturbance is prohibited from March 1 to June 15 in sage-grouse nesting habitat within 2 miles of a lek. This condition does not apply to the operation and maintenance of production facilities.

Table K.1-1 Oil and Gas Leases in the Monument						
<i>MTM Lease No.</i>	<i>Lease Stipulations (Example)</i>	<i>Lease Date</i>	<i>Lease Acreage in the Monument</i>	<i>Lease Acreage outside the Monument</i>	<i>Total Lease Acreage</i>	<i>Lease Status - Actual, Allocated or No Production</i>
West HiLine Leases						
084559	Attachment K. 1	11/1/1995	1,880	0	1,880	No Production
084560	Attachment K. 1	11/1/1995	134	1,119	1,253	No Production
087212	Attachment K. 1	9/1/1997	122	528	650	No Production
087658	Attachment K. 1	2/1/1998	485	0	485	No Production
089082	Attachment K. 1	5/1/1999	1,131	167	1,298	No Production
089452	Attachment K. 1	11/1/1999	800	0	800	No Production
089469	Attachment K. 1	11/1/1999	640	0	640	No Production
089473	Attachment K. 1	11/1/1999	1,240	0	1,240	No Production
089474	Attachment K. 1	11/1/1999	80	480	560	No Production
089475	Attachment K. 1	12/1/1999	1,280	0	1,280	No Production
089476	Attachment K. 1	12/1/1999	1,120	160	1,280	No Production
089482	Attachment K. 1	11/1/1999	1,416	0	1,416	No Production
Subtotal			10,328	2,454	12,782	
Non-West HiLine Leases						
13821-A	None	11/1/1969	1,099	0	1,099	Actual
1903-B	None	6/1/1967	320	240	560	Actual
1565	None	5/1/1967	2,560	0	2,560	Actual/Allocated
1568	None	5/1/1967	2,320	240	2,560	Actual
1578	None	5/1/1967	575	1,988	2,563	Actual
1885	None	6/1/1967	40	611	651	Allocated
1886	None	6/1/1967	1,920	640	2,560	Actual
1888	None	6/1/1967	480	1,982	2,462	Actual
1903	None	6/1/1967	1,360	200	1,560	Allocated
1914	None	6/1/1967	200	440	640	Actual
2060	None	7/1/1967	640	0	640	Actual
2061	None	7/1/1967	640	0	640	Allocated
13816	None	11/1/1969	2,533	0	2,533	Actual
13818	None	11/1/1969	2,532	0	2,532	Allocated
13827	None	11/1/1969	1,156	0	1,156	Allocated
16098	None	9/1/1970	1,240	1,280	2,520	Allocated
16102	None	9/1/1970	1,506	163	1,669	Allocated
16103	None	9/1/1970	13	2,507	2,520	Actual
16327	None	10/1/1970	80	2,358	2,438	Actual/Allocated
16458	None	10/1/1970	688	1,272	1,960	Actual
16461	None	10/1/1970	2,547	0	2,547	Actual
16617	None	11/1/1970	490	929	1,419	Allocated
16618	None	11/1/1970	320	2,240	2,560	Actual/Allocated
16939	None	12/1/1970	2,530	0	2,530	Actual
17376	None	2/1/1971	40	80	120	Allocated
18274	Attachments K. 1	7/1/1971	1,367	1,160	2,527	Allocated
18282	Attachments K. 1 & K. 2	5/1/1973	851	1,680	2,531	Actual
18283	Attachments K. 1 & K. 2	5/1/1973	1,240	1,320	2,560	Actual/Allocated
19446	None	9/1/1971	110	1,113	1,223	Actual/Allocated
53751	Attachment K. 1	6/1/1982	680	160	840	Actual
89460	Attachment K. 1	11/1/1999	400	40	440	No Production
Subtotal			32,477	22,643	55,120	
Total			42,805	25,097	67,902	

Objective: To protect sage-grouse nesting habitat from disturbance during spring and early summer in order to maximize annual production of young, and to protect nesting activities adjacent to nesting sites for the long-term maintenance of sage-grouse populations in the area.

Exception: An exception to this condition may be granted by the authorized officer if the operator submits a plan which demonstrates that impacts from the proposed action are acceptable or can be adequately mitigated.

Modification: The boundaries of the affected area may be modified if the authorized officer determines that portions of the area no longer contain sage-grouse nesting habitat within 2 miles of a lek. The dates for the timing restriction may be modified if new information indicates that the March 1 to June 15 dates are not valid for the area.

Waiver: This condition may be waived if the authorized officer determines that the affected area no longer contains sage-grouse nesting habitat within 2 miles of a lek.

Timing

Resource: Wildlife - Greater Sage-Grouse Crucial Winter Habitat

Condition of Approval: Surface disturbance is prohibited from December 1 to March 31 within crucial winter habitat for sage-grouse. This condition does not apply to the operation and maintenance of production facilities.

Objective: To protect sage-grouse winter habitat from disturbance during the winter use season, and to facilitate long-term maintenance of wildlife populations.

Exception: An exception to this condition may be granted by the authorized officer if the operator submits a plan which demonstrates that impacts from the proposed action are acceptable or can be adequately mitigated.

Modification: The boundaries of the affected area may be modified if the authorized officer determines that portions of the area no longer contain winter habitat for sage-grouse. The dates for the timing restriction may be modified if new wildlife use information indicates that the December 1 to March 31 dates are not valid for the area.

Waiver: This condition may be waived if the authorized officer determines that the affected area no longer contains winter habitat for sage-grouse.

Controlled Surface Use

Resource: Wildlife – Designated Sensitive Species

Condition of Approval: Surface disturbance may be controlled or excluded within 200 meters of the activity or the activity delayed 60 days within identified crucial habitat or active nests.

Objective: To maintain habitat for designated sensitive species.

Exception: An exception to this condition may be granted by the authorized officer if the operator submits a plan which demonstrates that the impacts from the proposed action are acceptable or can be adequately mitigated. Seasonal exceptions may be allowed from August 1 through March 1 (the nonbreeding season for birds) if the authorized officer determines that the proposed activity will not disturb the production potential of designated sensitive species.

Modification: The boundaries of the affected area may be modified if the authorized officer determines that portions of the area can be occupied without adversely affecting designated sensitive species.

Waiver: This condition may be waived if the authorized officer determines that the affected area can be occupied without adversely affecting designated sensitive species.

No Surface Disturbance

Resource: Wildlife – Black-Tailed Prairie Dogs

Condition of Approval: Surface disturbance is prohibited on prairie dog towns.

Objective: To protect prairie dog colonies and habitat for associated species.

Exception: An exception to this condition may be granted by the authorized officer if the operator submits a plan which demonstrates that the impacts from the proposed action are acceptable or can be adequately mitigated.

Modification: The boundaries of the affected area may be modified if the authorized officer determines that portions of the area can be occupied without adversely affecting black-tailed prairie dogs.

Waiver: This condition may be waived if the authorized officer determines that the affected area can be occupied without adversely affecting black-tailed prairie dogs.

Timing

Resource: Wildlife - Bald Eagle Nest Sites and Nesting Habitat

Condition of Approval: Surface disturbance is prohibited within 1 mile of active winter roosting areas from November 15 to February 29, if disturbance could cause an adverse effect.

Surface disturbance is prohibited within 1 mile of active bald eagle nests from February 1 to July 31, if disturbance could cause nest abandonment or failure.

Objective: To protect bald eagle nesting sites and/or nesting habitat in accordance with the Endangered Species Act (ESA) and the Montana Bald Eagle Management Plan.

Exception: An exception may be granted by the authorized officer if the operator submits a plan which demonstrates that the proposed action will not affect the bald eagle or its habitat. If the authorized officer determines that the action may or will have an adverse effect, the operator may submit a plan demonstrating that the impacts can be adequately mitigated. This plan must be approved by the BLM in consultation with the U.S. Fish and Wildlife Service (USFWS).

Modification: The boundaries of the affected area may be modified if the authorized officer, in consultation with USFWS, determines that portions of the area can be occupied without adversely affecting bald eagle nest sites or nesting habitat.

Waiver: This condition may be waived if the authorized officer, in consultation with the USFWS, determines that the affected area can be occupied without adversely affecting bald eagle nest sites or nesting habitat, or if the bald eagle is declared recovered and is no longer protected under the ESA.

Timing

Resource: Wildlife – Big Game Winter Range

Condition of Approval: Surface disturbance is prohibited from December 1 to March 31 within winter range for deer and elk and crucial antelope winter range. This condition does not apply to the operation and maintenance of production facilities.

Objective: To protect crucial elk, mule deer, and antelope winter range from disturbance during the winter use season, and to facilitate long-term maintenance of wildlife populations.

Exception: An exception to this condition may be granted by the authorized officer if the operator submits a plan which demonstrates that impacts from the proposed action are acceptable or can be adequately mitigated.

Modification: The boundaries of the affected area may be modified if the authorized officer determines that portions of the area no longer contain crucial winter range for wildlife. The dates for the timing restriction may be modified if new wildlife use information indicates that the December 1 to March 31 dates are not valid for the area.

Waiver: This condition may be waived if the authorized officer determines that the affected area no longer contains crucial winter range for wildlife.

Controlled Surface Use

Resource: Wildlife – Bighorn Sheep Distribution

Condition of Approval: Surface disturbance may be controlled or excluded within 200 meters of the activity or the activity delayed 60 days within bighorn sheep distribution areas.

Objective: To protect bighorn sheep during the winter use season, and to facilitate long-term maintenance of wildlife populations.

Exception: An exception to this condition may be granted by the authorized officer if the operator submits a plan which demonstrates that impacts from the proposed action are acceptable or can be adequately mitigated.

Modification: The boundaries of the affected area may be modified if the authorized officer determines that portions of the area no longer contain bighorn sheep.

Waiver: This condition may be waived if the authorized officer determines that the affected area no longer contains bighorn sheep distribution.

Timing

Resource: Wildlife – Bighorn Sheep Lambing Areas

Condition of Approval: Surface disturbance is prohibited from April 1 to June 15 within bighorn sheep lambing areas. This condition does not apply to the operation and maintenance of production facilities.

Objective: To protect bighorn sheep during the lambing season, and to facilitate long-term maintenance of wildlife populations.

Exception: An exception to this condition may be granted by the authorized officer if the operator submits a plan which demonstrates that impacts from the proposed action are acceptable or can be adequately mitigated.

Modification: The boundaries of the affected area may be modified if the authorized officer determines that portions of the area no longer contain bighorn sheep lambing areas. The dates for the timing restriction may be modified if new wildlife use information indicates that the April 15 to June 30 dates are not valid for the area.

Waiver: This condition may be waived if the authorized officer determines that the affected area no longer contains bighorn sheep lambing areas.

No Surface Disturbance

Resource: Streams and Riparian/Wetland Areas

Condition of Approval: Surface disturbance is prohibited within the channels of ephemeral, intermittent, and perennial streams, or within riparian and wetland areas.

Objective: To protect the unique biological and hydrological features associated with riparian and wetland areas.

Exception: An exception to this condition may be granted by the authorized officer if the operator submits a plan which demonstrates that impacts from the proposed action are acceptable or can be adequately mitigated.

Modification: The area affected by this condition may be modified by the authorized officer if it is determined that portions of the area do not include streams or riparian/wetland areas.

Waiver: This condition may be waived by the authorized officer if it is determined that the affected area does not include streams or riparian/wetland areas.

Controlled Surface Use

Resource: Soils/Steep Slopes

Condition of Approval: Prior to surface disturbance on slopes 30% and greater, a certified engineering and reclamation plan must be approved by the authorized officer. This plan must demonstrate how the following will be accomplished:

- Site productivity will be restored.
- Surface runoff will be adequately controlled.
- The site and adjacent areas will be protected from accelerated erosion, such as rilling, gullying, piping, slope failure, and mass wasting.
- Nearby watercourses will be protected from sedimentation. Water quality and quantity will be in conformance with state and federal water quality laws.
- Surface-disturbing activities will not be conducted during extended wet periods.

- Construction or reclamation will not be allowed when soils are frozen.

Objective: To maintain soil productivity, provide necessary protection to prevent excessive soil erosion on steep slopes, and to avoid areas subject to slope failure, mass wasting, piping, and/or having excessive reclamation problems.

Exception: None.

Modification: The area affected by this condition may be modified by the authorized officer if it is determined that portions of the area do not include slopes 30% and greater.

Waiver: This condition may be waived by the authorized officer if it is determined that the affected area does not include slopes 30% and greater.

Controlled Surface Use

Resource: Visual Resource Management (VRM) Classes I, II, III and IV

Condition of Approval: All surface-disturbing activities, semi-permanent and permanent facilities in VRM Classes I, II, III, and IV areas may require special design including location, painting and camouflage to blend with the natural surroundings and meet the visual quality objectives for the area.

Objective: To control the visual impacts of activities and facilities within acceptable levels.

Exception: None.

Modification: None.

Waiver: None.

No Surface Disturbance

Resource: Recreation

Condition of Approval: Surface disturbance is prohibited within 300 feet of developed recreation areas and undeveloped recreation areas receiving concentrated public use.

Objective: To protect developed recreation areas and undeveloped recreation areas receiving concentrated public use.

Exception: An exception to this condition may be granted by the authorized officer if the operator submits a plan demonstrating that impacts from the proposed action are acceptable or can be adequately mitigated.

Modification: The boundaries of the affected area may be modified by the authorized officer if the recreation area boundaries are changed.

Waiver: This condition may be waived if the authorized officer determines that the affected area no longer contains developed recreation areas or undeveloped recreation areas receiving concentrated public use.

Controlled Surface Use

Resource: Historic Properties and/or Cultural Resources

Condition of Approval: The affected area may be found to contain historic properties and/or resources protected under the National Historic Preservation Act (NHPA), American Indian Religious Freedom Act, Native American Graves Protection and Repatriation Act, E.O. 13007, or other statutes and executive orders. The BLM will not approve any ground-disturbing activities that may affect any such properties or resources until it completes its obligations under applicable requirements of the NHPA and other authorities. The BLM may require modification to exploration or development proposals to protect such properties, or disapprove any activity that is likely to result in adverse effects that cannot be successfully avoided, minimized or mitigated.

Objective: To protect historic properties and/or other cultural resources.

Exception: None.

Modification: None.

Waiver: None.

Alternative C – Oil and Gas Conditions of Approval

In addition to the oil and gas lease stipulations addressed under Alternative A, the following conditions of approval would be applied to APDs on lease acreage in the Monument. (See Table K.2 at the end of this Appendix.)

No Surface Disturbance

Resource: Wildlife – Greater Sage-Grouse Leks

Condition of Approval: Surface disturbance is prohibited within 1/4 mile of sage-grouse leks.

Objective: To protect sage-grouse lek sites necessary for the long-term maintenance of grouse populations in the area.

Exception: An exception to this condition may be granted by the authorized officer if the operator submits a plan which demonstrates that impacts from the proposed action are acceptable or can be adequately mitigated.

Modification: The boundaries of the affected area may be modified if the authorized officer determines that portions of the area can be occupied without adversely affecting sage-grouse lek sites.

Waiver: This condition may be waived if the authorized officer determines that the affected area can be occupied without adversely affecting sage-grouse lek sites, or if all lek sites within 1/4 mile of the area have not been used for 5 consecutive years.

Timing

Resource: Wildlife – Greater Sage-Grouse Nesting Zone

Condition of Approval: Surface use is prohibited from March 1 to June 15 in sage-grouse nesting habitat within 2 miles of a lek. This condition does not apply to the operation and maintenance of production facilities.

Objective: To protect sage-grouse nesting habitat from disturbance during spring and early summer in order to maximize annual production of young, and to protect nesting activities adjacent to nesting sites for the long-term maintenance of sage-grouse populations in the area.

Exception: An exception to this condition may be granted by the authorized officer if the operator submits a plan which demonstrates that impacts from the proposed action are acceptable or can be adequately mitigated.

Modification: The boundaries of the affected area may be modified if the authorized officer determines that portions of the area no longer contain sage-grouse nesting habitat within 2 miles of a lek. The dates for the timing restriction may be modified if new information indicates that the March 1 to June 15 dates are not valid for the area.

Waiver: This condition may be waived if the authorized officer determines that the affected area no longer contains sage-grouse nesting habitat within 2 miles of a lek.

Timing

Resource: Wildlife - Greater Sage-Grouse Crucial Winter Habitat

Condition of Approval: Surface disturbance is prohibited from December 1 to March 31 within winter habitat for sage-grouse. This condition does not apply to the operation and maintenance of production facilities.

Objective: To protect sage-grouse winter habitat from disturbance during the winter use season, and to facilitate long-term maintenance of wildlife populations.

Exception: An exception to this condition may be granted by the authorized officer if the operator submits a plan which demonstrates that impacts from the proposed action are acceptable or can be adequately mitigated.

Modification: The boundaries of the affected area may be modified if the authorized officer determines that portions of the area no longer contain winter habitat for sage-grouse. The dates for the timing restriction may be modified if new wildlife use information indicates that the December 1 to March 31 dates are not valid for the area.

Waiver: This condition may be waived if the authorized officer determines that the affected area no longer contains winter habitat for sage-grouse.

Controlled Surface Use

Resource: Wildlife – Black-Tailed Prairie Dogs

Condition of Approval: Surface disturbance would be avoided, or minimized, on prairie dog towns.

Objective: To protect prairie dog colonies and habitat for associated species.

Exception: An exception to this condition may be granted by the authorized officer if the operator submits a plan which demonstrates that the impacts from the proposed action are acceptable or can be adequately mitigated.

Modification: The boundaries of the affected area may be modified if the authorized officer determines that portions of the area can be occupied without adversely affecting black-tailed prairie dogs.

Waiver: This condition may be waived if the authorized officer determines that the affected area can be occupied without adversely affecting black-tailed prairie dogs.

No Surface Disturbance

Resource: Wildlife – Designated Sensitive Species

Condition of Approval: Surface disturbance is prohibited within identified crucial habitat or within 1/4 mile of active nests.

Objective: To maintain habitat for special status species.

Exception: An exception to this condition may be granted by the authorized officer if the operator submits a plan

which demonstrates that the impacts from the proposed action are acceptable or can be adequately mitigated. Seasonal exceptions may be allowed from August 1 through March 1 (the nonbreeding season for birds) if the authorized officer determines that the proposed activity will not disturb the production potential of special status species.

Modification: The boundaries of the affected area may be modified if the authorized officer determines that portions of the area can be occupied without adversely affecting special status species.

Waiver: This condition may be waived if the authorized officer determines that the affected area can be occupied without adversely affecting special status species.

No Surface Disturbance

Resource: Wildlife - Bald Eagle Nest Sites and Nesting Habitat

Condition of Approval: Surface disturbance is prohibited within 1/2 mile of known bald eagle nest sites that have been active within the past 7 years.

Objective: To protect bald eagle nesting sites and/or nesting habitat in accordance with the ESA and the Montana Bald Eagle Management Plan.

Exception: An exception may be granted by the authorized officer if the operator submits a plan which demonstrates that the proposed action will not affect the bald eagle or its habitat. If the authorized officer determines that the action may or will have an adverse effect, the operator may submit a plan demonstrating that the impacts can be adequately mitigated. This plan must be approved by the BLM in consultation with the USFWS.

Modification: The boundaries of the affected area may be modified if the authorized officer, in consultation with USFWS, determines that portions of the area can be occupied without adversely affecting bald eagle nest sites or nesting habitat.

Waiver: This condition may be waived if the authorized officer, in consultation with the USFWS, determines that the affected area can be occupied without adversely affecting bald eagle nest sites or nesting habitat, or if the bald eagle is declared recovered and is no longer protected under the ESA.

Timing

Resource: Wildlife – Big Game Winter Range

Condition of Approval: Surface disturbance is prohibited from December 1 to March 31 within winter range for deer

and elk and crucial antelope winter range. This condition does not apply to the operation and maintenance of production facilities.

Objective: To protect crucial deer, elk, and antelope winter range from disturbance during the winter use season, and to facilitate long-term maintenance of wildlife populations.

Exception: An exception to this condition may be granted by the authorized officer if the operator submits a plan which demonstrates that impacts from the proposed action are acceptable or can be adequately mitigated.

Modification: The boundaries of the affected area may be modified if the authorized officer determines that portions of the area no longer contain crucial winter range for wildlife. The dates for the timing restriction may be modified if new wildlife use information indicates that the December 1 to March 31 dates are not valid for the area.

Waiver: This condition may be waived if the authorized officer determines that the affected area no longer contains crucial winter range for wildlife.

Timing

Resource: Wildlife – Bighorn Sheep Distribution

Condition of Approval: Surface disturbance is prohibited from December 1 to March 31 within bighorn sheep distribution areas. This condition does not apply to the operation and maintenance of production facilities.

Objective: To protect bighorn sheep during the winter use season, and to facilitate long-term maintenance of wildlife populations.

Exception: An exception to this condition may be granted by the authorized officer if the operator submits a plan which demonstrates that impacts from the proposed action are acceptable or can be adequately mitigated.

Modification: The boundaries of the affected area may be modified if the authorized officer determines that portions of the area no longer contain bighorn sheep. The dates for the timing restriction may be modified if new wildlife use information indicates that the December 1 to March 31 dates are not valid for the area.

Waiver: This condition may be waived if the authorized officer determines that the affected area no longer contains bighorn sheep distribution.

Timing

Resource: Wildlife – Bighorn Sheep Lambing Areas

Condition of Approval: Surface disturbance is prohibited from April 1 to June 15 within bighorn sheep lambing areas. This condition does not apply to the operation and maintenance of production facilities.

Objective: To protect bighorn sheep during the lambing season, and to facilitate long-term maintenance of wildlife populations.

Exception: An exception to this condition may be granted by the authorized officer if the operator submits a plan which demonstrates that impacts from the proposed action are acceptable or can be adequately mitigated.

Modification: The boundaries of the affected area may be modified if the authorized officer determines that portions of the area no longer contain bighorn sheep lambing areas. The dates for the timing restriction may be modified if new wildlife use information indicates that the April 1 to June 15 dates are not valid for the area.

Waiver: This condition may be waived if the authorized officer determines that the affected area no longer contains bighorn sheep lambing areas.

No Surface Disturbance

Resource: Streams and Riparian/Wetland Areas

Condition of Approval: Surface disturbance is prohibited within 1,000 feet of the channel of ephemeral, intermittent, and perennial streams, or within 1,000 feet of riparian and wetland areas.

Objective: To protect the unique biological and hydrological features associated with riparian and wetland areas and streams.

Exception: An exception to this condition may be granted by the authorized officer if the operator submits a plan which demonstrates that impacts from the proposed action are acceptable or can be adequately mitigated.

Modification: The area affected by this condition may be modified by the authorized officer if it is determined that portions of the area do not include streams or riparian areas.

Waiver: This condition may be waived by the authorized officer if it is determined that the affected area does not include streams or riparian areas.

Controlled Surface Use

Resource: Soils/Steep Slopes

Condition of Approval: Prior to surface disturbance on slopes 30% and greater or on slopes 20% and greater with

severely erosive and/or slumping soils, a certified engineering and reclamation plan must be approved by the authorized officer. This plan must demonstrate how the following will be accomplished:

- Site productivity will be restored.
- Surface runoff will be adequately controlled.
- The site and adjacent areas will be protected from accelerated erosion, such as rilling, gullyng, piping, slope failure, and mass wasting.
- Nearby watercourses will be protected from sedimentation. Water quality and quantity will be in conformance with state and federal water quality laws.
- Surface-disturbing activities will not be conducted during extended wet periods.
- Construction or reclamation will not be allowed when soils are frozen.

The operator must also provide an evaluation of past practices on similar terrain and be able to demonstrate success under similar conditions.

Objective: To maintain soil productivity, provide necessary protection to prevent excessive soil erosion on steep slopes, and to avoid areas subject to slope failure, mass wasting, piping, and/or having excessive reclamation problems.

Exception: None.

Modification: The area affected by this condition may be modified by the authorized officer if it is determined that portions of the area do not include slopes 30% and greater or severely erosive and/or slumping soils on 20% and greater slopes.

Waiver: This condition may be waived by the authorized officer if it is determined that the affected area does not include slopes 30% and greater or severely erosive soils on 20% and greater slopes.

No Surface Disturbance

Resource: Soils/Steep Slopes

Condition of Approval: Surface disturbance is prohibited on slopes 40% and greater.

Objective: To maintain soil productivity, provide necessary protection to prevent excessive soil erosion on steep slopes, and to avoid areas subject to slope failure, mass wasting, piping, and/or having excessive reclamation problems/failure.

Exception: The authorizing officer may grant an exception to this condition if the operator submits a certified engineer-

ing and reclamation plan that demonstrates impacts from the proposed action are acceptable or can be adequately mitigated. This plan must demonstrate how the following will be accomplished:

- Site productivity will be restored.
- Surface runoff will be adequately controlled.
- The site and adjacent areas will be protected from accelerated erosion, such as rilling, gullyng, piping, slope failure, and mass wasting.
- Nearby watercourses will be protected from sedimentation. Water quality and quantity will be in conformance with state and federal water quality laws.
- Surface-disturbing activities will not be conducted during extended wet periods.
- Construction or reclamation will not be allowed when soils are frozen.

The operator must also provide an evaluation of past practices on similar terrain and be able to demonstrate success under similar conditions.

Modification: The area affected by this condition may be modified by the authorized officer if it is determined that portions of the area do not include slopes 40% and greater.

Waiver: This condition may be waived by the authorized officer if it is determined that the affected area does not include slopes 40% and greater.

Controlled Surface Use

Resource: Visual Resource Management (VRM) Class I

Condition of Approval: All surface-disturbing activities, semi-permanent and permanent facilities in VRM Class I will utilize 1) proper site selection; 2) reduction of soil and vegetative disturbance; 3) choice of color; and 4) over time, return the disturbed area to a seamless, natural landscape.

Objective: To reduce the visual contrast on BLM land in the existing landscape.

Exception: None.

Modification: None.

Waiver: None.

Controlled Surface Use

Resource: Visual Resource Management (VRM) Classes II and III

Condition of Approval: All surface-disturbing activities, semi-permanent and permanent facilities in VRM Classes

II and III areas may require special design including location, painting and camouflage to blend with the natural surroundings and meet the visual quality objectives for the area.

Objective: To control the visual impacts of activities and facilities within acceptable levels.

Exception: None.

Modification: None.

Waiver: None.

No Surface Disturbance

Resource: Recreation

Condition of Approval: Surface disturbance is prohibited within the line of sight/sound or 300 feet (whichever is closer) of developed recreation areas and undeveloped recreation areas receiving concentrated public use. Work-over types of operations would be limited to weekdays, except for emergency situations when operations would be allowed.

Objective: To protect developed recreation areas and undeveloped recreation areas receiving concentrated public use.

Exception: An exception to this condition may be granted by the authorized officer if the operator submits a plan demonstrating that impacts from the proposed action are acceptable or can be adequately mitigated.

Modification: The boundaries of the affected area may be modified by the authorized officer if the recreation area boundaries are changed.

Waiver: This condition may be waived if the authorized officer determines that the affected area no longer contains developed recreation areas or undeveloped recreation areas receiving concentrated public use.

Controlled Surface Use

Resource: Historic Properties and/or Cultural Resources

Condition of Approval: The affected area may be found to contain historic properties and/or resources protected under the National Historic Preservation Act (NHPA), American Indian Religious Freedom Act, Native American Graves Protection and Repatriation Act, E.O. 13007, or other statutes and executive orders. The BLM will not approve any ground-disturbing activities that may affect

any such properties or resources until it completes its obligations under applicable requirements of the NHPA and other authorities. The BLM may require modification to exploration or development proposals to protect such properties, or disapprove any activity that is likely to result in adverse effects that cannot be successfully avoided, minimized or mitigated.

Objective: To protect historic properties and/or other cultural resources.

Exception: None.

Modification: None.

Waiver: None.

Alternative D – Oil and Gas Conditions of Approval

In addition to the oil and gas lease stipulations addressed under Alternative A, the following conditions of approval would be applied to applications for permits to drill (APDs) on lease acreage in the Monument. (See Table K.1-2 at the end of this section.)

No Surface Disturbance

Resource: Wildlife – Greater Sage-Grouse Leks

Condition of Approval: Surface disturbance is prohibited within 1/4 mile of sage-grouse leks.

Objective: To protect sage-grouse lek sites necessary for the long-term maintenance of grouse populations in the area.

Exception: An exception to this condition may be granted by the authorized officer if the operator submits a plan which demonstrates that impacts from the proposed action are acceptable or can be adequately mitigated.

Modification: The boundaries of the affected area may be modified if the authorized officer determines that portions of the area can be occupied without adversely affecting sage-grouse lek sites.

Waiver: This condition may be waived if the authorized officer determines that the affected area can be occupied without adversely affecting sage-grouse lek sites, or if all lek sites within 1/4 mile of the area have not been used for 5 consecutive years.

Timing

Resource: Wildlife – Greater Sage-Grouse Nesting Zone

Condition of Approval: Surface disturbance is prohibited from March 1 to June 15 in sage-grouse nesting habitat within 2 miles of a lek. This condition does not apply to the operation and maintenance of production facilities.

Objective: To protect sage-grouse nesting habitat from disturbance during spring and early summer in order to maximize annual production of young, and to protect nesting activities adjacent to nesting sites for the long-term maintenance of sage-grouse populations in the area.

Exception: An exception to this condition may be granted by the authorized officer if the operator submits a plan which demonstrates that impacts from the proposed action are acceptable or can be adequately mitigated.

Modification: The boundaries of the affected area may be modified if the authorized officer determines that portions of the area no longer contain sage-grouse nesting habitat within 2 miles of a lek. The dates for the timing restriction may be modified if new information indicates that the March 1 to June 15 dates are not valid for the area.

Waiver: This condition may be waived if the authorized officer determines that the affected area no longer contains sage-grouse nesting habitat within 2 miles of a lek.

Timing

Resource: Wildlife - Greater Sage-Grouse Crucial Winter Habitat

Condition of Approval: Surface disturbance is prohibited from December 1 to March 31 within crucial winter habitat for sage-grouse. This condition does not apply to the operation and maintenance of production facilities.

Objective: To protect sage-grouse winter habitat from disturbance during the winter use season, and to facilitate long-term maintenance of wildlife populations.

Exception: An exception to this condition may be granted by the authorized officer if the operator submits a plan which demonstrates that impacts from the proposed action are acceptable or can be adequately mitigated.

Modification: The boundaries of the affected area may be modified if the authorized officer determines that portions of the area no longer contain winter habitat for sage-grouse. The dates for the timing restriction may be modified if new wildlife use information indicates that the December 1 to March 31 dates are not valid for the area.

Waiver: This condition may be waived if the authorized officer determines that the affected area no longer contains winter habitat for sage-grouse.

No Surface Disturbance

Resource: Wildlife – Black-Tailed Prairie Dogs

Condition of Approval:

Objective: To protect prairie dog colonies and habitat for associated species.

Exception: An exception to this condition may be granted by the authorized officer if the operator submits a plan which demonstrates that the impacts from the proposed action are acceptable or can be adequately mitigated.

Modification: The boundaries of the affected area may be modified if the authorized officer determines that portions of the area can be occupied without adversely affecting black-tailed prairie dogs.

Waiver: This condition may be waived if the authorized officer determines that the affected area can be occupied without adversely affecting black-tailed prairie dogs.

No Surface Disturbance

Resource: Wildlife – Designated Sensitive Species

Condition of Approval: Surface disturbance is prohibited within identified crucial habitat and within 1/4 mile of active nests.

Objective: To maintain habitat for special status species.

Exception: An exception to this condition may be granted by the authorized officer if the operator submits a plan which demonstrates that the impacts from the proposed action are acceptable or can be adequately mitigated. Seasonal exceptions may be allowed from August 1 through March 1 (the nonbreeding season for birds) if the authorized officer determines that the proposed activity will not disturb the production potential of special status species.

Modification: The boundaries of the affected area may be modified if the authorized officer determines that portions of the area can be occupied without adversely affecting special status species.

Waiver: This condition may be waived if the authorized officer determines that the affected area can be occupied without adversely affecting special status species.

Timing

Resource: Wildlife - Designated Sensitive Species

Condition of Approval: Surface disturbance is prohibited from March 1 to August 1 within 1/4 mile of active nests.

Objective: To maintain habitat for special status species.

Exception: An exception to this condition may be granted by the authorized officer if the operator submits a plan which demonstrates that the impacts from the proposed action are acceptable or can be adequately mitigated.

Modification: The boundaries of the affected area may be modified if the authorized officer determines that portions of the area can be occupied without adversely affecting the production potential of designated sensitive species.

Waiver: This condition may be waived if the authorized officer determines that the affected area can be occupied without adversely affecting the production potential of designated sensitive species.

No Surface Disturbance

Resource: Wildlife - Bald Eagle Nest Sites and Nesting Habitat

Condition of Approval: Surface disturbance is prohibited within 1/2 mile of known bald eagle nest sites that have been active within the past 7 years and within riparian area nesting habitat.

Objective: To protect bald eagle nesting sites and/or nesting habitat in accordance with the ESA and the Montana Bald Eagle Management Plan.

Exception: An exception may be granted by the authorized officer if the operator submits a plan which demonstrates that the proposed action will not affect the bald eagle or its habitat. If the authorized officer determines that the action may or will have an adverse effect, the operator may submit a plan demonstrating that the impacts can be adequately mitigated. This plan must be approved by the BLM in consultation with the USFWS.

Modification: The boundaries of the affected area may be modified if the authorized officer, in consultation with USFWS, determines that portions of the area can be occupied without adversely affecting bald eagle nest sites or nesting habitat.

Waiver: This condition may be waived if the authorized officer, in consultation with the USFWS, determines that the affected area can be occupied without adversely affect-

ing bald eagle nest sites or nesting habitat, or if the bald eagle is declared recovered and is no longer protected under the ESA.

Timing

Resource: Wildlife – Big Game Winter Range

Condition of Approval: Surface disturbance is prohibited from December 1 to May 15 within winter range for deer and elk and crucial antelope winter range. This condition does not apply to the operation and maintenance of production facilities.

Objective: To protect crucial deer, elk, and antelope winter range from disturbance during the winter use season, and to facilitate long-term maintenance of wildlife populations.

Exception: An exception to this condition may be granted by the authorized officer if the operator submits a plan which demonstrates that impacts from the proposed action are acceptable or can be adequately mitigated.

Modification: The boundaries of the affected area may be modified if the authorized officer determines that portions of the area no longer contain crucial winter range for wildlife. The dates for the timing restriction may be modified if new wildlife use information indicates that the December 1 to May 15 dates are not valid for the area.

Waiver: This condition may be waived if the authorized officer determines that the affected area no longer contains crucial winter range for wildlife.

Timing

Resource: Wildlife – Bighorn Sheep Distribution

Condition of Approval: Surface disturbance is prohibited from December 1 to March 31 within bighorn sheep distribution areas. This condition does not apply to the operation and maintenance of production facilities.

Objective: To protect bighorn sheep during the winter use season, and to facilitate long-term maintenance of wildlife populations.

Exception: An exception to this condition may be granted by the authorized officer if the operator submits a plan which demonstrates that impacts from the proposed action are acceptable or can be adequately mitigated.

Modification: The boundaries of the affected area may be modified if the authorized officer determines that portions of the area no longer contain bighorn sheep. The dates for the timing restriction may be modified if new wildlife use

information indicates that the December 1 to March 31 dates are not valid for the area.

Waiver: This condition may be waived if the authorized officer determines that the affected area no longer contains bighorn sheep distribution.

No Surface Disturbance

Resource: Wildlife – Bighorn Sheep Lambing Areas

Condition of Approval: Surface disturbance is prohibited within bighorn sheep lambing areas. This condition does not apply to the operation and maintenance of production facilities.

Objective: To protect bighorn sheep and to facilitate long-term maintenance of wildlife populations.

Exception: An exception to this condition may be granted by the authorized officer if the operator submits a plan which demonstrates that impacts from the proposed action are acceptable or can be adequately mitigated.

Modification: The boundaries of the affected area may be modified if the authorized officer determines that portions of the area no longer contain bighorn sheep lambing areas.

Waiver: This condition may be waived if the authorized officer determines that the affected area no longer contains bighorn sheep lambing areas.

No Surface Disturbance

Resource: Streams and Riparian/Wetland Areas

Condition of Approval: Surface disturbance is prohibited within 1/4 mile of the channels of ephemeral, intermittent, and perennial streams, or within 1/4 mile of the outer margins of riparian and wetland areas.

Objective: To protect the unique biological and hydrological features associated with riparian and wetland areas.

Exception: An exception to this condition may be granted by the authorized officer if the operator submits a plan which demonstrates that impacts from the proposed action are acceptable or can be adequately mitigated.

Modification: The area affected by this condition may be modified by the authorized officer if it is determined that portions of the area do not include streams or riparian/wetland areas.

Waiver: This condition may be waived by the authorized officer if it is determined that the affected area does not include streams or riparian/wetland areas.

Controlled Surface Use

Resource: Soils/Steep Slopes

Condition of Approval: Prior to surface disturbance on slopes 30% and greater or on slopes 20% and greater with severely erosive and/or slumping soils, a certified engineering and reclamation plan must be approved by the authorized officer. This plan must demonstrate how the following will be accomplished:

- Site productivity will be restored.
- Surface runoff will be adequately controlled.
- The site and adjacent areas will be protected from accelerated erosion, such as rilling, gullying, piping, slope failure, and mass wasting.
- Nearby watercourses will be protected from sedimentation. Water quality and quantity will be in conformance with state and federal water quality laws.
- Surface-disturbing activities will not be conducted during extended wet periods.
- Construction or reclamation will not be allowed when soils are frozen.

The operator must also provide an evaluation of past practices on similar terrain and be able to demonstrate success under similar conditions.

Objective: To maintain soil productivity, provide necessary protection to prevent excessive soil erosion on steep slopes, and to avoid areas subject to slope failure, mass wasting, piping, and/or having excessive reclamation problems.

Exception: None.

Modification: The area affected by this condition may be modified by the authorized officer if it is determined that portions of the area do not include slopes 30% and greater or severely erosive and/or slumping soils on 20% and greater slopes.

Waiver: This condition may be waived by the authorized officer if it is determined that the affected area does not include slopes 30% and greater or severely erosive and/or slumping soils on 20% and greater slopes.

No Surface Disturbance

Resource: Soils/Steep Slopes

Condition of Approval: Surface disturbance is prohibited on slopes 40% and greater. This applies to locations, facilities and roads.

Objective: To maintain soil productivity, provide necessary protection to prevent excessive soil erosion on steep

slopes, and to avoid areas subject to slope failure, mass wasting, piping, and/or having excessive reclamation problems/failure.

Exception: None.

Modification: The area affected by this condition may be modified by the authorized officer if it is determined that portions of the area do not include slopes 40% and greater.

Waiver: This condition may be waived by the authorized officer if it is determined that the affected area does not include slopes 40% and greater.

No Surface Disturbance

Resource: Visual Resource Management (VRM) Class I

Condition of Approval: Surface disturbance is prohibited in VRM Class I areas.

Objective: To reduce the visual contrast on BLM land in the existing landscape.

Exception: None.

Modification: None.

Waiver: None.

Controlled Surface Use

Resource: Visual Resource Management (VRM) Class II

Condition of Approval: All surface-disturbing activities, semi-permanent and permanent facilities in VRM Class II will utilize 1) proper site selection; 2) reduction of soil and vegetative disturbance; 3) choice of color; and 4) over time, return the disturbed area to a seamless, natural landscape.

Objective: To control the visual impacts of activities and facilities within acceptable levels.

Exception: None.

Modification: None.

Waiver: None.

No Surface Disturbance

Resource: Recreation

Condition of Approval: Surface disturbance is prohibited within the line of sight/sound or 300 feet (whichever is

closer) of developed recreation areas and undeveloped recreation areas receiving concentrated public use. Work-over types of operations, like well fracing or maintenance, would be limited to Tuesdays, Wednesdays, and Thursdays.

Objective: To protect developed recreation areas and undeveloped recreation areas receiving concentrated public use.

Exception: An exception to this condition may be granted by the authorized officer if the operator submits a plan demonstrating that impacts from the proposed action are acceptable or can be adequately mitigated.

Modification: The boundaries of the affected area may be modified by the authorized officer if the recreation area boundaries are changed.

Waiver: This condition may be waived if the authorized officer determines that the affected area no longer contains developed recreation areas or undeveloped recreation areas receiving concentrated public use.

Controlled Surface Use

Resource: Historic Properties and/or Cultural Resources

Condition of Approval: The affected area may be found to contain historic properties and/or resources protected under the National Historic Preservation Act (NHPA), American Indian Religious Freedom Act, Native American Graves Protection and Repatriation Act, E.O. 13007, or other statutes and executive orders. The BLM will not approve any ground-disturbing activities that may affect any such properties or resources until it completes its obligations under applicable requirements of the NHPA and other authorities. The BLM may require modification to exploration or development proposals to protect such properties, or disapprove any activity that is likely to result in adverse effects that cannot be successfully avoided, minimized or mitigated.

Objective: To protect historic properties and/or other cultural resources.

Exception: None.

Modification: None.

Waiver: None.

Alternative E - Oil and Gas Conditions of Approval

Under Alternative E, surface occupancy and use would be prohibited on all 12 West HiLine oil and gas leases. This would include the entire leasehold (both in and outside of the Monument).

The following conditions of approval would apply to the 31 non-West HiLine oil and gas leases (only the lease acreage in the Monument). (See Table K.1-2 at the end of this section.)

No Surface Disturbance

Resource: Wildlife – Greater Sage-Grouse Leks

Condition of Approval: Surface disturbance is prohibited within 2 miles of sage-grouse leks.

Objective: To protect sage-grouse lek sites necessary for the long-term maintenance of grouse populations in the area.

Exception: None.

Modification: None.

Waiver: None.

No Surface Disturbance

Resource: Wildlife – Greater Sage-Grouse Nesting Zone

Condition of Approval: Surface disturbance is prohibited within 2 miles of sage-grouse leks.

Objective: To protect sage-grouse nesting habitat from disturbance in order to maximize annual production of young, and to protect nesting activities adjacent to nesting sites for the long-term maintenance of sage-grouse populations in the area.

Exception: None.

Modification: None.

Waiver: None.

No Surface Disturbance

Resource: Wildlife - Greater Sage-Grouse Crucial Winter Habitat

Condition of Approval: Surface disturbance is prohibited within crucial winter habitat for sage-grouse.

Objective: To protect sage-grouse winter habitat from disturbance during the winter use season, and to facilitate long-term maintenance of wildlife populations.

Exception: None.

Modification: None.

Waiver: None.

No Surface Disturbance

Resource: Wildlife – Black-Tailed Prairie Dogs

Condition of Approval: Surface disturbance is prohibited within 1/4 mile of prairie dog towns.

Objective: To protect prairie dog colonies and habitat for associated species.

Exception: None.

Modification: None.

Waiver: None.

No Surface Disturbance

Resource: Wildlife – Designated Sensitive Species

Condition of Approval: Surface disturbance is prohibited within identified crucial habitat and within 1/2 mile of active nests.

Objective: To maintain habitat for designated sensitive species.

Exception: None.

Modification: None.

Waiver: None.

No Surface Disturbance

Resource: Wildlife - Bald Eagle Nest Sites and Nesting Habitat

Condition of Approval: Surface disturbance is prohibited within 1/2 mile of known bald eagle nest sites that have been active within the past 7 years and within riparian area nesting habitat.

Objective: To protect bald eagle nesting sites and/or nesting habitat in accordance with the ESA and the Montana Bald Eagle Management Plan.

Exception: None.

Modification: None.

Waiver: None.

No Surface Disturbance

Resource: Wildlife – Big Game Winter Range

Condition of Approval: Surface disturbance is prohibited within crucial winter range for elk, mule deer, and antelope.

Objective: To protect crucial elk, mule deer, and antelope winter range from disturbance and to facilitate long-term maintenance of wildlife populations.

Exception: None.

Modification: None.

Waiver: None.

No Surface Disturbance

Resource: Wildlife – Bighorn Sheep Distribution

Condition of Approval: Surface disturbance is prohibited within bighorn sheep distribution areas.

Objective: To protect bighorn sheep and to facilitate long-term maintenance of wildlife populations.

Exception: None.

Modification: None.

Waiver: None.

No Surface Disturbance

Resource: Wildlife – Bighorn Sheep Lambing Areas

Condition of Approval: Surface disturbance is prohibited within 1 mile of bighorn sheep lambing areas, if such activities would adversely impact lamb survival.

Objective: To protect bighorn sheep and to facilitate long-term maintenance of wildlife populations.

Exception: None.

Modification: None.

Waiver: None.

No Surface Disturbance

Resource: Streams and Riparian/Wetland Areas

Condition of Approval: Surface disturbance is prohibited within 1/4 mile of the channels of ephemeral, intermittent, and perennial streams, or within 1/4 mile of the outer margins of riparian and wetland areas.

Objective: To protect the unique biological and hydrological features associated with streams and riparian/wetland areas.

Exception: None.

Modification: None.

Waiver: None.

No Surface Disturbance

Resource: Soils/Steep Slopes

Condition of Approval: Surface disturbance is prohibited on slopes 20% and greater.

Objective: To maintain soil productivity, provide necessary protection to prevent excessive soil erosion on steep slopes, and to avoid areas subject to slope failure, mass wasting, piping, and/or reclamation failure.

Exception: None.

Modification: None.

Waiver: None.

No Surface Disturbance

Resource: Visual Resource Management (VRM) Classes I and II

Condition of Approval: Surface disturbance is prohibited in VRM Class I and II areas.

Objective: To reduce the visual contrast on BLM land in the existing landscape.

Exception: None.

Modification: None.

Waiver: None.

No Surface Disturbance

Resource: Recreation

Condition of Approval: Surface disturbance is prohibited within the line of sight/sound or 300 feet (whichever is closer) of developed recreation areas and undeveloped recreation areas receiving concentrated public use. Work-over types of operations, like well fracing or maintenance, would be limited to Tuesdays, Wednesdays, and Thursdays.

Objective: To protect developed recreation areas and undeveloped recreation areas receiving concentrated public use.

Exception: None.

Modification: None.

Waiver: None.

Controlled Surface Use

Resource: Historic Properties and/or Cultural Resources

Condition of Approval: The affected area may be found to contain historic properties and/or resources protected under the National Historic Preservation Act (NHPA), American Indian Religious Freedom Act, Native American Graves Protection and Repatriation Act, E.O. 13007, or other statutes and executive orders. The BLM will not approve any ground-disturbing activities that may affect any such properties or resources until it completes its obligations under applicable requirements of the NHPA and other authorities. The BLM may require modification to exploration or development proposals to protect such properties, or disapprove any activity that is likely to result in adverse effects that cannot be successfully avoided, minimized or mitigated.

Objective: To protect historic properties and/or other cultural resources.

Exception: None.

Modification: None.

Waiver: None.

Alternative F (Preferred Alternative) - Oil and Gas Conditions of Approval

In addition to the oil and gas lease stipulations addressed under Alternative A, the following conditions of approval would be applied to applications for permits to drill (APDs) on lease acreage in the Monument. (See Table K.1-2 at the end of this section.)

No Surface Disturbance

Resource: Wildlife – Greater Sage-Grouse Leks

Condition of Approval: Surface disturbance is prohibited within 1/4 mile of sage-grouse leks.

Objective: To protect sage-grouse lek sites necessary for the long-term maintenance of grouse populations in the area.

Exception: An exception to this condition may be granted by the authorized officer if the operator submits a plan which demonstrates that impacts from the proposed action are acceptable or can be adequately mitigated.

Modification: The boundaries of the affected area may be modified (decreased or increased) if the authorized officer determines that portions of the area can be occupied without adversely affecting sage-grouse lek sites or if the authorized officer determines a greater distance is needed to protect the lek based on new research and studies.

Waiver: This condition may be waived if the authorized officer determines that the affected area can be occupied without adversely affecting sage-grouse lek sites, or if all lek sites within 1/4 mile of the area have not been used for 5 consecutive years.

Timing

Resource: Wildlife – Greater Sage-Grouse Nesting Zone

Condition of Approval: Surface disturbance is prohibited from March 1 to June 15 in sage-grouse nesting habitat within 2 miles of a lek. Travel on identified designated roads may include these timing restrictions or limited site visits.

Objective: To protect sage-grouse nesting habitat from disturbance during spring and early summer in order to maximize annual production of young, and to protect nesting activities adjacent to nesting sites for the long-term maintenance of sage-grouse populations in the area.

Exception: An exception to this condition may be granted by the authorized officer if the operator submits a plan which demonstrates that impacts from the proposed action are acceptable or can be adequately mitigated.

Modification: The boundaries of the affected area may be modified if the authorized officer determines that portions of the area no longer contain sage-grouse nesting habitat within 2 miles of a lek. The dates for the timing restriction may be modified if new information indicates that the March 1 to June 15 dates are not valid for the area.

Waiver: This condition may be waived if the authorized officer determines that the affected area no longer contains sage-grouse nesting habitat within 2 miles of a lek.

Timing

Resource: Wildlife - Greater Sage-Grouse Crucial Winter Habitat

Condition of Approval: Surface disturbance is prohibited from December 1 to March 31 within crucial winter habitat for sage-grouse. This condition does not apply to the operation and maintenance of production facilities. Travel on identified designated roads may include these timing restrictions or limited site visits.

Objective: To protect sage-grouse crucial winter habitat from disturbance during the winter use season, and to facilitate long-term maintenance of wildlife populations.

Exception: An exception to this condition may be granted by the authorized officer if the operator submits a plan which demonstrates that impacts from the proposed action are acceptable or can be adequately mitigated.

Modification: The boundaries of the affected area may be modified if the authorized officer determines that portions of the area no longer contain winter habitat for sage-grouse. The dates for the timing restriction may be modified if new wildlife use information indicates that the December 1 to March 31 dates are not valid for the area.

Waiver: This condition may be waived if the authorized officer determines that the affected area no longer contains winter habitat for sage-grouse.

Controlled Surface Use

Resource: Wildlife – Black-Tailed Prairie Dogs

Condition of Approval: Surface disturbance may be controlled or excluded within 1/4 mile of prairie dog towns, if an activity would adversely impact prairie dogs and/or associated species.

Objective: To protect prairie dog colonies and habitat for associated species.

Exception: An exception to this condition may be granted by the authorized officer if the operator submits a plan which demonstrates that the impacts from the proposed action are acceptable or can be adequately mitigated.

Modification: The boundaries of the affected area may be modified if the authorized officer determines that portions of the area can be occupied without adversely affecting black-tailed prairie dogs.

Waiver: This condition may be waived if the authorized officer determines that the affected area can be occupied without adversely affecting black-tailed prairie dogs.

Controlled Surface Use

Resource: Wildlife – Designated Sensitive Species

Condition of Approval: Surface disturbance may be controlled or excluded within 1/4 mile of the activity or the activity delayed 90 days within identified crucial habitat or active nests.

Objective: To maintain habitat for designated sensitive species.

Exception: An exception to this condition may be granted by the authorized officer if the operator submits a plan which demonstrates that the impacts from the proposed action are acceptable or can be adequately mitigated. Seasonal exceptions may be allowed from August 1 through March 1 (the nonbreeding season for birds) if the authorized officer determines that the proposed activity will not disturb the production potential of designated sensitive species.

Modification: The boundaries of the affected area may be modified if the authorized officer determines that portions of the area can be occupied without adversely affecting designated sensitive species.

Waiver: This condition may be waived if the authorized officer determines that the affected area can be occupied without adversely affecting designated sensitive species.

Timing

Resource: Wildlife - Ferruginous Hawk

Condition of Approval: Surface disturbance is prohibited from March 1 to August 1 within 1/2 mile of active ferruginous hawk nest sites.

Objective: To maintain the production potential of ferruginous hawk nest sites.

Exception: An exception to this condition may be granted by the authorized officer if the operator submits a plan which demonstrates that the impacts from the proposed action are acceptable or can be adequately mitigated. Seasonal exceptions may be allowed from August 1 through March 1 (the nonbreeding season) if the authorized officer determines that the proposed activity will not disturb the production potential of ferruginous hawk nest sites.

Modification: The boundaries of the affected area may be modified if the authorized officer determines that portions of the area can be occupied without adversely affecting the production potential of ferruginous hawk nest sites.

Waiver: This condition may be waived if the authorized officer determines that the affected area can be occupied without adversely affecting the production potential of ferruginous hawk nest sites.

No Surface Disturbance

Resource: Wildlife - Bald Eagle Nest Sites and Nesting Habitat

Condition of Approval: Surface disturbance is prohibited within 1/2 mile of known bald eagle nest sites that have been active within the past 7 years, if disturbance could cause nest abandonment or failure.

Objective: To protect bald eagle nesting sites and/or nesting habitat in accordance with the ESA and the Montana Bald Eagle Management Plan.

Exception: An exception may be granted by the authorized officer if the operator submits a plan which demonstrates that the proposed action will not affect the bald eagle or its habitat. If the authorized officer determines that the action may or will have an adverse effect, the operator may submit a plan demonstrating that the impacts can be adequately mitigated. This plan must be approved by the BLM in consultation with the USFWS.

Modification: The boundaries of the affected area may be modified if the authorized officer, in consultation with USFWS, determines that portions of the area can be occupied without adversely affecting bald eagle nest sites or nesting habitat.

Waiver: This condition may be waived if the authorized officer, in consultation with the USFWS, determines that the affected area can be occupied without adversely affecting bald eagle nest sites or nesting habitat, or if the bald eagle is declared recovered and is no longer protected under the ESA.

Timing

Resource: Wildlife – Big Game Winter Range

Condition of Approval: Surface disturbance is prohibited from December 1 to March 31 within winter range for elk and deer and crucial antelope winter range. Travel on identified designated roads may include these timing restrictions or limited site visits.

Objective: To protect crucial deer, elk, and antelope winter range from disturbance during the winter use season, and to facilitate long-term maintenance of wildlife populations.

Exception: An exception to this condition may be granted by the authorized officer if the operator submits a plan which demonstrates that impacts from the proposed action are acceptable or can be adequately mitigated.

Modification: The boundaries of the affected area may be modified if the authorized officer determines that portions of the area no longer contain crucial winter range for wildlife. The dates for the timing restriction may be modified if new wildlife use information indicates that the December 1 to March 31 dates are not valid for the area.

Waiver: This condition may be waived if the authorized officer determines that the affected area no longer contains crucial winter range for wildlife.

Timing

Resource: Wildlife – Bighorn Sheep Distribution

Condition of Approval: Surface disturbance is prohibited from December 1 to March 31 within bighorn sheep distribution areas. Travel on identified designated roads may include these timing restrictions or limited site visits.

Objective: To protect bighorn sheep during the winter use season, and to facilitate long-term maintenance of wildlife populations.

Exception: An exception to this condition may be granted by the authorized officer if the operator submits a plan which demonstrates that impacts from the proposed action are acceptable or can be adequately mitigated.

Modification: The boundaries of the affected area may be modified if the authorized officer determines that portions of the area no longer contain bighorn sheep. The dates for the timing restriction may be modified if new wildlife use information indicates that the December 1 to March 31 dates are not valid for the area.

Waiver: This condition may be waived if the authorized officer determines that the affected area no longer contains bighorn sheep distribution.

Timing

Resource: Wildlife – Bighorn Sheep Lambing Areas

Condition of Approval: Surface disturbance is prohibited from April 1 to June 15 within bighorn sheep lambing areas. Travel on identified designated roads may include these timing restrictions or limited site visits.

Objective: To protect bighorn sheep during the lambing season, and to facilitate long-term maintenance of wildlife populations.

Exception: An exception to this condition may be granted by the authorized officer if the operator submits a plan which demonstrates that impacts from the proposed action are acceptable or can be adequately mitigated.

Modification: The boundaries of the affected area may be modified if the authorized officer determines that portions of the area no longer contain bighorn sheep lambing areas. The dates for the timing restriction may be modified if new wildlife use information indicates that the April 1 to June 15 dates are not valid for the area.

Waiver: This condition may be waived if the authorized officer determines that the affected area no longer contains bighorn sheep lambing areas.

No Surface Disturbance

Resource: Streams and Riparian/Wetland Areas

Condition of Approval: Surface disturbance is prohibited within 500 feet of the channels of ephemeral, intermittent, and perennial streams, or within 500 feet of the outer margins of riparian and wetland areas.

Objective: To protect the unique biological and hydrological features associated with streams and riparian/wetland areas.

Exception: An exception to this condition may be granted by the authorized officer if the operator submits a plan which demonstrates that impacts from the proposed action are acceptable or can be adequately mitigated. An exception may also be allowed when the surface of the site is 20 feet higher than the channel (out of the floodplain).

Modification: The area affected by this condition may be modified by the authorized officer if it is determined that portions of the area do not include riparian/wetland areas.

Waiver: This condition may be waived by the authorized officer if it is determined that the affected area does not include streams or riparian/wetland areas.

Controlled Surface Use

Resource: Soils/Steep Slopes

Condition of Approval: Prior to surface disturbance on slopes 30% and greater or on slopes 20% and greater with severely erosive and/or slumping soils, a certified engineering and reclamation plan must be approved by the authorized officer. This plan must demonstrate how the following will be accomplished:

- Site productivity will be restored.
- Surface runoff will be adequately controlled.
- The site and adjacent areas will be protected from accelerated erosion, such as rilling, gullying, piping, slope failure, and mass wasting.
- Nearby watercourses will be protected from sedimentation. Water quality and quantity will be in conformance with state and federal water quality laws.
- Surface-disturbing activities will not be conducted during extended wet periods.
- Construction or reclamation will not be allowed when soils are frozen.

The operator must also provide an evaluation of past practices on similar terrain and be able to demonstrate success under similar conditions.

Objective: To maintain soil productivity, provide necessary protection to prevent excessive soil erosion on steep slopes, and to avoid areas subject to slope failure, mass wasting, piping, and/or having excessive reclamation problems.

Exception: None.

Modification: The area affected by this condition may be modified by the authorized officer if it is determined that portions of the area do not include slopes 30% and greater or severely erosive and/or slumping soils on 20% and greater slopes.

Waiver: This condition may be waived by the authorized officer if it is determined that the affected area does not include slopes 30% and greater or severely erosive and/or slumping soils on 20% and greater slopes.

No Surface Disturbance

Resource: Soils/Steep Slopes

Condition of Approval: Surface disturbance is prohibited on slopes 40% and greater.

Objective: To maintain soil productivity, provide necessary protection to prevent excessive soil erosion on steep slopes, and to avoid areas subject to slope failure, mass wasting, piping, and/or having excessive reclamation problems/failure.

Exception: The authorizing officer may grant an exception to this condition for short distances (less than 300 feet) for pipelines and access roads if the operator submits a certified engineering and reclamation plan that clearly demonstrates impacts from the proposed actions are acceptable or can be adequately mitigated. This plan must include and demonstrate how the following will be accomplished:

- Site productivity will be restored.
- Surface runoff will be adequately controlled.
- The site and adjacent areas will be protected from accelerated erosion, such as rilling, gully, piping, and slope failure and mass wasting.
- Nearby water sources will be protected from sedimentation. Water quality and quantity will be in conformance with state and federal water quality laws.
- Site-specific analysis of soil physical, chemical and mechanical (engineering) properties and behavior will be conducted.
- Surface-disturbing activities will not be conducted during extended wet periods.
- Construction or reclamation will not be allowed when soils are frozen.

The operator must also provide an evaluation of past practices on similar terrain and be able to demonstrate success under similar conditions.

Modification: The area affected by this condition may be modified by the authorized officer if it is determined that portions of the area do not include slopes 40% and greater.

Waiver: This condition may be waived by the authorized officer if it is determined that the affected area does not include slopes 40% and greater.

No Surface Disturbance

Resource: Visual Resource Management (VRM) Class I

Condition of Approval: Surface disturbance is prohibited in VRM Class I areas.

Objective: To reduce the visual contrast on BLM land in the existing landscape.

Exception: None.

Modification: None.

Waiver: None.

Controlled Surface Use

Resource: Visual Resource Management (VRM) Classes II, III and IV

Condition of Approval: All surface-disturbing activities, semi-permanent and permanent facilities in VRM Classes II, III and IV will utilize 1) proper site selection; 2) reduction of soil and vegetative disturbance; 3) choice of color; and 4) over time, return the disturbed area to a seamless, natural landscape.

Objective: To control the visual impacts of activities and facilities within acceptable levels.

Exception: None.

Modification: None.

Waiver: None.

No Surface Disturbance

Resource: Recreation

Condition of Approval: Surface disturbance is prohibited within the line of sight/sound or 300 feet (whichever is closer) of developed recreation areas (Level 1, 2, and 3 sites) and undeveloped recreation areas receiving concentrated public use. Work-over types of operations would be limited to weekdays, except for emergency situations when operations would be allowed.

Objective: To protect developed recreation areas and undeveloped recreation areas receiving concentrated public use.

Exception: An exception to this condition may be granted by the authorized officer if the operator submits a plan demonstrating that impacts from the proposed action are acceptable or can be adequately mitigated.

Modification: The boundaries of the affected area may be modified by the authorized officer if the recreation area boundaries are changed.

Waiver: This condition may be waived if the authorized officer determines that the affected area no longer contains developed recreation areas or undeveloped recreation areas receiving concentrated public use.

Controlled Surface Use

Resource: Historic Properties and/or Cultural Resources

Condition of Approval: The affected area may be found to contain historic properties and/or resources protected under the National Historic Preservation Act (NHPA), American Indian Religious Freedom Act, Native American Graves Protection and Repatriation Act, E.O. 13007, or other statutes and executive orders. The BLM will not approve any ground-disturbing activities that may affect any such properties or resources until it completes its obligations under applicable requirements of the NHPA and other authorities. The BLM may require modification to exploration or development proposals to protect such properties, or disapprove any activity that is likely to result in adverse effects that cannot be successfully avoided, minimized or mitigated.

Objective: To protect historic properties and/or other cultural resources.

Exception: None.

Modification: None.

Waiver: None.

Attachment K.1-1 Oil and Gas Lease Stipulations (Form 3109-1 and Standard Stipulations)

Esthetics – To maintain esthetic values, all surface-disturbing activities, semi-permanent and permanent facilities may require special design including location, painting and camouflage to blend with the natural surroundings and meet the intent of the visual quality objectives of the surface management agency.

Erosion Control – Surface-disturbing activities may be prohibited during muddy and/or wet soil periods. This limitation does not apply to operation and maintenance of producing wells using authorized roads.

Controlled or Limited Surface Use Stipulation – This stipulation may be modified by special stipulations which are hereto attached or when specifically approved in writing by the Bureau of Land Management with concurrence of the surface management agency. Distances and/or time periods may be made less restrictive depending on the actual onground conditions. The prospective lessee should contact the surface management agency for more specific locations and information regarding the restrictive nature of this stipulation.

The lessee/operator is given notice that the lands within this lease may include special areas and that such areas may contain special values, may be needed for special purposes, or may require special attention to prevent damage to surface and/or other resources. Possible special areas are identified below. Any surface use or occupancy within such special areas will be strictly controlled, or if absolutely necessary, excluded. Use or occupancy will be restricted only when the Bureau of Land Management and/or the surface management agency demonstrates the restriction necessary for the protection of such special areas and existing or planned uses. Appropriate modifications to imposed restrictions will be made for the maintenance and operations of producing oil and gas wells.

After the surface management agency has been advised of specific proposed surface use or occupancy on the leased lands, and on request of the lessee/operator, the Agency will furnish further data on any special areas which may include:

100 feet from the edge of the rights-of-way from highways, designated county roads and appropriate federally-owned or controlled roads and recreation trails.

500 feet, or when necessary, within the 25-year flood plain from reservoirs, lakes, and ponds and intermittent, ephemeral or small perennial streams; 1,000 feet, or when necessary, within the 100-year flood plain from larger perennial streams, rivers, and domestic water supplies.

500 feet from grouse strutting grounds. Special care to avoid nesting areas associated with strutting grounds will be necessary during the period from March 1 to June 30. One-fourth mile from identified essential habitat of state and federal sensitive species. Crucial wildlife winter ranges during the period from December 1 to May 15, and in elk calving areas, during the period from May 1 to June 30.

300 feet from occupied buildings, developed recreational areas, undeveloped recreational areas receiving concentrated public use and sites eligible for or designated as National Register sites.

Seasonal road closures, roads for special uses, specified roads during heavy traffic periods and on areas having restrictive off-road vehicle designations.

On slopes over 30%, or 20% on extremely erodable or slumping soils.

Notice for Cultural and Paleontological Resources – The federal surface management agency is responsible for assuring that the leased lands are examined to determine if cultural resources are present and to specify mitigation measures. Prior to undertaking any surface-disturbing activities on the lands covered by this lease, the lessee or operator, unless notified to the contrary by the surface management agency, shall:

1. Contact the appropriate surface management agency to determine if a site-specific cultural resource inventory is required. If an inventory is required, then;
2. Engage the services of a cultural resource specialist acceptable to the surface management agency to conduct a

cultural resource inventory of the area of proposed surface disturbance. The operator may elect to inventory an area larger than the area of proposed disturbance to cover possible site relocation which may result from environmental or other considerations. An acceptable inventory report is to be submitted to the surface management agency for review and approval no later than that time when an otherwise complete application for approval of drilling or subsequent surface-disturbing operation is submitted.

3. Implement mitigation measures required by the surface management agency. Mitigation may include the relocation of proposed lease-related activities or other protective measures such as testing salvage and recordation. Where impacts to cultural resources cannot be mitigated to the satisfaction of the surface management agency, surface occupancy on that area must be prohibited.

The lessee or operator shall immediately bring to the attention of the surface management agency any cultural or paleontological resources discovered as a result of approved operations under this lease, and not disturb such discoveries until directed to proceed by the surface management agency.

Notice for Endangered or Threatened Species – The surface management agency is responsible for assuring that the leased land is examined prior to undertaking any surface-disturbing activities to determine effects upon any plant or animal species, listed or proposed for listing as endangered or threatened, or their habitats. The findings of this examination may result in some restrictions to the operator's plans or even disallow use and occupancy that would be in violation of the Endangered Species Act of 1983 by detrimentally affecting endangered or threatened species or their habitats.

The lessee/operator may, unless notified by the authorized officer of the surface management agency that the examination is not necessary, conduct the examination on the leased lands at his discretion and cost. This examination must be done by or under the supervision of a qualified resources specialist approved by the surface management agency. An acceptable report must be provided to the surface management agency identifying the anticipated effects of a proposed action on endangered or threatened species or their habitats.

Attachment K.1-2 Oil and Gas Lease Stipulations (Forms 3100-11 and 3100-28)

The lessee hereby agrees the following stipulations are part of the lease terms:

- A. At least two weeks prior to entry on the land for purposes of field operations, including seismic work, the lessee must advise the District Manager, Bureau of Land Management and after consultation prepare a "Surface Management Plan." The final plan shall be prepared in duplicate, including maps, for approval by the District Manager. Such approval will be conditioned on reasonable requirements needed to prevent soil erosion, air and water pollution, unnecessary damages to the surface vegetation and other resources of the United States and to provide for the restoration of the land surface and vegetation. The plan shall contain all such provisions as the Bureau of Land Management may deem necessary to maintain proper management of the lands and resources within the operating area.

The plan will contain the following items:

1. The location, construction specifications, maintenance program, and estimated use by the lessee, his employees and agents, of all access and work roads.
 2. The methods to be used in the operations, including disposal of waste material.
 3. The size and location of all structures and facilities to be constructed.
 4. The location and size of areas upon which vegetation will be destroyed and/or soil laid bare and the steps which will be taken to prevent and control soil erosion thereon, including but not limited to the proposed program for rehabilitation and revegetation of these disturbed lands both during and upon cessation of operations.
 5. The steps which will be taken to prevent water and air pollution.
 6. The character, amount, and time of use of explosives or fire, including safety precautions which will be taken during their use.
 7. Provisions for protecting permitted livestock and wildlife.
- B. Prior to seismic field operations, if the lessee does not have appropriate bonding coverage, it will be necessary for him to furnish an Oil and Gas Exploration Bond (43 CFR sec. 3104.9).

If later operations require departure from or additions to the approved plan, these revisions or amendments, together with justification statement for proposed revisions, will be submitted to the District Manager for approval.

Any and all operations conducted in advance of approval of an original, revised or amended operating plan, or which are not in accord with an approved plan, constitute a violation of the terms of this lease and the Bureau of Land Management reserves the right to close down the operation until such corrective action, as is deemed necessary, is taken by the lessee.

- C. No occupancy of the surface of the areas described in items 1 through 4 below is authorized by this lease. The lessee is, however, authorized to employ directional drilling to develop the mineral resources under these areas provided that such drilling or other works will not disturb the surface area or otherwise interfere with their use by the Bureau of Land Management. It is understood and agreed that the use of these areas for public purposes is superior to any other use. Areas to be excluded from direct drilling occupancy are:
1. Within 660 feet on either side of the right-of-way boundary of any and all improved roads and/or highways within the lease areas.
 2. Within 100 feet on either side of the centerline of any and all trails within the lease area.

3. Within 300 feet of the normal high water line of any and all lakes, ponds, and reservoirs located within the lease area.
4. Within 300 feet of any and all springs or water wells within the lease area.

The distances in subparagraphs 1, 2, 3, and 4, immediately above, may be reduced when specifically agreed to in the "Surface Management Plan."

No access or work trail, earth cut or fill, structure development, facility or any other improvement of a permanent nature will be permitted if it can be viewed from the high water surface of the Missouri River.

Attachment K.1-3 – Oil and Gas Lease Stipulations (Form 3100-24)

1. Notwithstanding any provision of this lease to the contrary, any drilling, construction or other operation on the leased lands that will disturb the surface thereof or otherwise affect the environment (hereinafter called “surface disturbing operations”), conducted by lessee, shall be subject, as set forth in this stipulation, to the prior approval of such operation by the Area Oil and Gas Supervisor, in consultation with the appropriate surface management agency and to such reasonable conditions not inconsistent with the purposes for which this lease is issued, as the Supervisor may require to protect the surface of the leased lands and the environment.
2. Prior to entry upon the land or the disturbance of the surface thereof for drilling or other purposes, the lessee shall submit for approval two copies of a map and explanation of the nature of the anticipated activity and surface disturbance.

An environmental analysis will be made by the Geological Survey, in consultation with the appropriate surface management agency, for the purpose of insuring proper protection of the surface, the natural resources, the environment, existing improvements and for assuring timely reclamation of disturbed lands.

3. Upon completion of said environmental analysis, the Area Oil and Gas Supervisor shall notify lessee of the conditions, if any, to which the proposed surface disturbing operations will be subject. Said conditions may relate to any of the following:
 - (a) The location of drilling or other exploratory or developmental operations or the manner in which they are conducted;
 - (b) The type of vehicles that may be used and the areas in which they may be used; and
 - (c) The manner or location in which the improvements, such as roads, buildings, pipelines or other improvements are to be constructed.

**Table K.1-2 Oil and Gas Leases in the Monument and Affected Resources
(Acres)**

MTM Lease No.	Lease Acreage in the Monument	Greater Sage-Grouse		Black Tailed Prairie Dogs	Sensitive Species		Deer and Elk Winter Range	Antelope Crucial Winter Range	Bighorn Sheep Dist.	Bighorn Sheep		Streams		
		1/4 Mile Lek	2 Miles Nesting Area		Crucial Winter Habitat	1/4 Mile				1/2 Mile	Lambing Area	1 Mile Buffer	500'	1,000'
West HiLine Leases														
084559	1,880		102	216			620	494				464	870	1,103
084560	134		113	119				130				29	67	90
087212	122		23					122				44	90	110
087658	485						485		485	485	485	82	145	192
089082	1,131		496	106				1,108				223	448	598
089452	800				72		788		575	408	655	239	416	498
089469	640		542				634					237	414	511
089473	1,240						1,227		606	5	769	400	686	828
089474	80					15	62	8					2	3
089475	1,280						717	473				371	710	887
089476	1,120						1,039	226						
089482	1,416					3	1,414		1,414	161	1,283	214	491	672
Subtotal	10,328		1,276	441	72	3	6,986	2,561	3,080	1,059	3,192	2,303	4,339	5,492
Non-West HiLine Leases														
1565	2,560	31	2,529				1,945					536	1,048	1,397
1568	2,320		951				198	1,539				569	1,098	1,394
1578	575		444				561					271	453	519
1885	40													
1886	1,920							56				628	1,045	1,201
1888	480											121	218	262
1903	1,360							500				125	259	370
1903-B	320		2					130				117	201	234

MTM Lease No.	Lease Acreage in the Monument	Greater Sage-Grouse			Black Tailed Prairie Dogs	Sensitive Species		Deer and Elk Winter Range	Antelope Crucial Winter Range	Bighorn Sheep Dist.	Bighorn Sheep			Streams	
		1/4 Mile Lek	2 Miles Nesting Area	Crucial Winter Habitat		1/4 Mile	1/2 Mile				Lambing Area	1 Mile Buffer	500'	1,000'	1/4 Mile
1914	200						28	200							
2060	640							640		471	321	521	66	130	173
2061	640							637		528	210	611	113	189	242
13816	2,533							2,529	943	1,545		197	32	129	236
13818	2,532					1	58	2,528			1,036	2,196	401	734	933
13821-A	1,099					122	396	1,099		1,099	1,099				1
13827	1,156							1,154		1,099	531	948	400	638	762
16098	1,240						1	1,233		1,154			379	750	939
16102	1,506		49				24	1,266	244				423	753	938
16103	13		7						13						
16327	80		77					77							
16458	688		87						126				80	161	217
16461	2,547					125	460	2,547					634	1,129	1,422
16617	490					4	64			441	110	378	129	258	308
16618	320		320					320					156	255	276
16939	2,530					125	480	2,054	37	318			590	1,112	1,397
17376	40		32					40					2	23	38
18274	1,367					155	606			1,367	1,037	1,367	120	249	336
18282	851									851	741	851	210	386	483
18283	1,240									1,223	100	1,133	374	662	767
19446	110							109							
53751	680									672	225	661	21	77	152
89460	400									396	94	396	121	214	262
Subtotal	32,477	31	4,498			532	2,117	19,137	3,588	11,164	5,504	10,358	6,618	12,171	15,259
Total	42,805	31	5,774	441	72	535	2,188	26,123	6,149	14,244	6,563	13,550	8,921	16,510	20,751

Table K.1-2 (continued)
Oil and Gas Leases in the Monument and Affected Resources (acres)

MTM Lease No.	Lease Acreage in the Monument	Soils/Slope				Alternatives A and B VRM Class				Alternative C VRM Class				Alternatives D and E VRM Class				Alternative F VRM Class														
		20% and >		30% and >	40% and >	I	II	III	IV	I	II	III	I	II	III	I	II	III	IV													
																				K-.32 and >												
		West HiLine Leases																														
084559	1,880	170	170	20	1																1,784		96		1,784	96	1,880		1,784	39	1,784	57
084560	134						38		96		38	96	134			38		96														
087212	122								122			122	122				94	28														
087658	485	323	238	164	61				485	16	469		16	469																		
089082	1,131	19	19				19		1,112		19	1,112	1,131			19	529	583														
089452	800	454	449	315	223				800		0	800	800				638	162														
089469	640	197	197	35	1		588		52		640		640			640																
089473	1,240	788	384	468	210				1,240		1,180	60	1,240			1,180		60														
089474	80	6	6	1			80				80		80			80																
089475	1,280	323	270	109	26		1,280				1,280		1,280			1,280																
089476	1,120	124	124	25	4				1,120		624	496	1,120			624	220	276														
089482	1,416	995	516	546	227	92			1,324	92	1,324		92	1,324	92	1,324																
Subtotal	10,328	3,399	2,373	1,683	753	92	3,789		6,447	108	7,438	2,782	108	10,220	108	7,438	1,520	1,26														
Non West HiLine Leases																																
1565	2,560	275	275	69	12		2,250		310		2,264	296		2,560		2,264	296															
1568	2,320	126	123	13			1,319		1,001		1,319	1001		2,320		1,319	576	425														
1578	575	220	220	82	19		147		428		147	428		575		147	428															
1885	40	14	14	7			40				40			40		40																
1886	1,920	439	439	92	14		1,920				1,920			1,920		1,920																
1888	480	69	69	6			480				480			480		480																
1903	1,360	166	166	14			1,360				1,360			1,360		1,360																
1903-B	320	117	117	32	11		320				320			320		320																

MTM Lease No.	Lease Acreage in the Monument	Soils/Slope				Alternatives A and B VRM Class						Alternative C VRM Class			Alternatives D and E VRM Class			Alternative F VRM Class			
		20% and >			K-32 and >	30% and >	40% and >	I	II	III	IV	I	II	III	I	II	III	I	II	III	IV
1914	200	1	1	1					200										200		
2060	640	298	298	298	155	82					640	39	439	162	39	601		39	439		162
2061	640	401	401	401	232	120					640	150	437	53	150	490		150	437		53
13816	2,533	746	734	734	271	63					2,533		1,965	568		2,533			1,965	68	500
13818	2,532	1,191	1,191	1,191	655	344					2,532	860	926	746	860	1,672		860	926	109	637
13821-A	1,099	767	767	767	473	235		70			1,029	71	1,028		71	1,028		71	1,028		
13827	1,156	757	757	757	475	251		13			1,143	13	1,143		13	1,143		13	1,143		
16098	1,240	342	342	342	131	35			1,081		159	392	710	138	392	848		392	710	1	137
16102	1,506	419	417	417	147	41			297		1,209		967	539		1,506			967	539	
16103	13								13				13			13			13		
16327	80	46	46	46	22	7			80				80			80			80		
16458	688	135	135	135	32	3			688				688			688			688		
16461	2,547	1,073	1,073	1,073	354	66					2,547		2,119	428		2,547			2,119	393	35
16617	490	262	131	131	154	89			490				490			490			490		
16618	320	220	220	220	137	70			320				320			320			320		
16939	2,530	916	916	916	277	28			2,190		340		2,487	43		2,530			2,487		43
17376	40	22	22	22	9	3			40				40			40			40		
18274	1,367	859	408	408	585	406		309	1,058			309	1,058		309	1,058		309	1,058		
18282	851	537	248	248	354	241		463	388			463	388		463	388		463	388		
18283	1,240	655	655	655	324	147		374	866			374	866		374	866		374	866		
19446	110	26	16	16	10	4					110			110		110				110	
53751	680	323	323	323	137	45		157	523			157	523		157	523		157	523		
89460	400	194	163	163	103	63			400				400			400			400		
Subtotal	32,477	11,616	10,687	10,687	5,352	2,399		1,386	16,470		14,621	2,828	25,137	4,512	2,828	29,649		2,828	25,137	2,520	1,992
Total	42,805	15,015	13,060	13,060	7,035	3,152		1,478	20,259		21,068	2,936	32,575	7,294	2,936	39,869		2,936	32,575	4,040	3,254

Appendix K.2

Oil and Gas Board Orders

Table K.2-1 Leroy Field Board Orders			
<i>Board Order (Approval Date)</i>	<i>Area Covered by Order</i>	<i>Geologic Formation Covered by Order</i>	<i>Spacing or Exception to State Spacing Regulations</i>
1975-19 (4-17-1975)	T23N-R18E Sections 1-36 T23N-R19E Sections 1-36 T24N-R18E Sections 7-36 T24N-R19E Sections 7-36	Judith River Eagle-Virgelle	Leroy Field Delineated at 320 acre spacing.
1975-39 (10-16-1975)	T24N-R19E NENE Section 21	Judith River Eagle-Virgelle	Exception Location to Board Order 1975-19
1978-42 (8-3-1978)	T24N-R18E SWNW Section 30	Judith River Eagle-Virgelle	Exception Location to Board Order 1975-19
1979-11 (2-15-1979)	T24N-R19E NENE Section 21	Judith River Eagle-Virgelle	Well Location Re-survey
1979-56 (8-2-1979)	T24N-R19E NWNW Section 26	Judith River Eagle-Virgelle	Exception Location to Board Order 1975-19
1980-72 (7-31-1980)	T23N-R18E SWSW Section 3	Judith River Eagle-Virgelle	Exception Location to Board Order 1975-19
1981-95 (7-31-1981)	T24N-R18E SESW Section 11	Judith River Eagle-Virgelle	Exception Location to Board Orders 1975-19 and 1980-72
1985-43 (7-24-1985)	T23N-R19E NWSW Section 28	Judith River Eagle-Virgelle	Exception Location to Board Order 1975-19
1987-31 (8-13-1987)	T24N-R20E Sections 1-36 T25N-R20E Sections 1-36 T26N-R20E Sections 18-36 T25N-R21E Sections 6, 7, 17, 18, 19, 30, and 31 T24N-R21E Section 7	Judith River Eagle-Virgelle	Enlarge the Leroy Field
1989-68 (11-30-1989)	Certain Fields within the State of Montana including Leroy	Not Applicable	Issuance of Drilling Permits at Locations Authorized by Field Rules
1993-57 (10-14-1993)	T23N-R19E SESE Section 20	Judith River Eagle-Virgelle	Exception Location to Board Order 1975-19
1994-44 (7-28-1994)	T23N-R19E SWSW Section 21	Judith River Eagle-Virgelle	Exception Location to Board Order 1975-19
1998-76 (9-3-1998)	T25N-R20E SWSE Section 6	Judith River Eagle-Virgelle	Exception Location to Board Orders 1975-19
2000-18 (2-10-2000)	T25N-R20E SESW Section 6	Judith River Eagle-Virgelle	Exception Location to Board Orders 1975-19 and 1987-31
2000-61 (5-18-2000)	T25N-R20E SESW Section 6	Judith River Eagle-Virgelle	Exception Location to Board Orders 1975-19, 1987-31 and 2000-18

**Table K.2-2
Sawtooth Mountain Field Board Orders**

(Note – The below orders are not all-inclusive for the Sawtooth Mountain Field because only a small portion of the field is contained within the Monument.)

<i>Board Order (Approval Date)</i>	<i>Area Covered by Order</i>	<i>Geologic Formation Covered by Order</i>	<i>Spacing or Exception to State Spacing Regulations</i>
1976-45 (7-15-1976)	T26N-R20E Sections 1-8 T27N-R18E Sections 1-3, 10-16, 21, 22, 27, and 28 T27N-R19E Sections 3-18, 20 and 21 T27N-R19E Sections 5-9, 15-22, 26-36 T28N-R19E Sections 31-34	Judith River Eagle-Virgelle	Sawtooth Mountain Field Delineated at 640 acre spacing. 3 Exception Locations included; however, they are outside the Monument
2002-199 (12-5-2002)	T26N-R20E Section 2	Judith River Eagle-Virgelle	Increased well density and exception to Board Order 1976-45 allowing three additional wells in Section 2, but not closer than 660 feet to spacing unit boundary for a total of four wells. Order implies to keep 640 acre spacing.
2004-111 (4-1-2004)	T26N-R20E Section 1	Judith River Eagle-Virgelle	Increased well density and exception to Board Order 1976-45 allowing two additional wells in Section 1, but not closer than 660 feet to spacing unit boundary for a total of 3 wells. Order implies to keep 640 acre spacing.
2004-161 (5-20-2004)	T26N-R20E Section 3	Judith River Eagle-Virgelle	Increased well density and exception to Board Order 1976-45 allowing two additional wells in Section 3, but not closer than 660 feet to spacing unit boundary for a total of 3 wells. Order implies to keep 640 acre spacing.

Appendix K.3

Reasonable Foreseeable Development

Summary

The Reasonably Foreseeable Development (RFD) is a long-term projection of oil and gas exploration, development, production, and reclamation activity in the Upper Missouri River Breaks National Monument. The RFD study area lies in the eastern portion of the Monument and includes the 43 federal leases in the Monument. The RFD projects a baseline scenario of activity assuming all potentially productive areas can be open under standard lease terms and conditions, except those areas designated as closed by the Proclamation. It provides basic information that is analyzed in the various alternatives.

The RFD study area lies in northcentral Montana, approximately 60 miles north of Lewistown, Montana, and 38 miles south of Chinook. The area contains three producing gas fields with wells that are completed in the Judith River or Eagle Formations. The greater portion of the study area is characterized by steep river Breaks country with plateaus and narrow ridges caused by erosion.

Applications for Permits to Drill (APDs) have been received by the BLM from three federal lease holders in the study area. One APD was received from Klabzuba Oil and Gas, Inc., a U.S. firm based in Denver, Colorado and is pending approval based on the Monument Resource Management Plan (RMP). Two APDs were received from Macum Energy, Inc.: one APD is approved and remains undrilled and the other APD is pending approval based on a lawsuit regarding the future of three federal leases issued under the West HiLine RMP. One APD was received from Devon Louisiana Corp and is pending approval based on the Monument RMP. The four planned wells would be drilled from the following locations:

Devon Federal 9-7

SWNE Section 9, T26N R20E

Klabzuba Federal 31-25-20B

SENE Section 31, T25N R20E

Macum Federal 42-30*

SENE Section 30, T25N R20E

Macum Federal 23-10

NESW Section 10, T25N R20E

* APD Approved May 10, 2002 under the Macum, Klabzuba, Ocean Environmental Assessment

The wells (see Figure K.3-1) would develop known gas resources in three exploration/production areas within the

study area. The wells would not require the construction of any new roads. If the wells are productive, they would require the installation of 3.7 miles of new pipeline to connect into existing pipelines.

If the wells are productive, typical production facilities for wells in the study area include: meter shed (8 ft long x 8 ft tall x 5 ft wide building), well head (can be enclosed within the meter shed depending on the operation); gas meter run (enclosed within the meter shed); glycol barrel (can be enclosed within the meter shed); small water separator (normally enclosed within the meter shed depending on the well and the operation); water disposal pits (sized depending on the operation but usually 10 ft x 10 ft x 6 ft); and gas compressor (compressors typically do not accompany each well). The size and horsepower of the compressor depends on the operation and its application, which further depends on well rates, well pressures, and the line size of the compressor (one gas compressor could service 8-12 wells). Currently, no gas compressors are located within the study area; however, a skid-mounted 42 HP compressor has been authorized by the State of Montana on a private well near the Monument (the compressor has not been installed as of the date of this document).

The study area is also being addressed because of the proposed activity and its potential for future exploration and development on lands where the federal leases exist. The federal leases within the study area are considered to have moderate and high potential for oil and gas occurrence. Occurrence is based on structural geology and historic activity of the area, and it is further confirmed using well information to identify the extent of reservoirs. The areas considered to have moderate potential are those lands within the study area not having high potential. The areas considered to have high potential are those lands within 18 exploration and development areas where commercial volumes and moderate shows of natural gas were evident at the time of well completion (see Figure K.3-2).

A study and review was conducted to evaluate the geologic potential of the area and to determine the reasonable foreseeable development that could be expected. Of the 18 exploration and development areas it is reasonably foreseeable that natural gas wells could be drilled in 11 of the areas. Based on this information, Table K.3-1 shows the number of RFD wells for each exploration/development area. However, this is prior to considering any resource stipulations or conditions of approval, which is addressed in Chapter 4.

Figure K.3-1

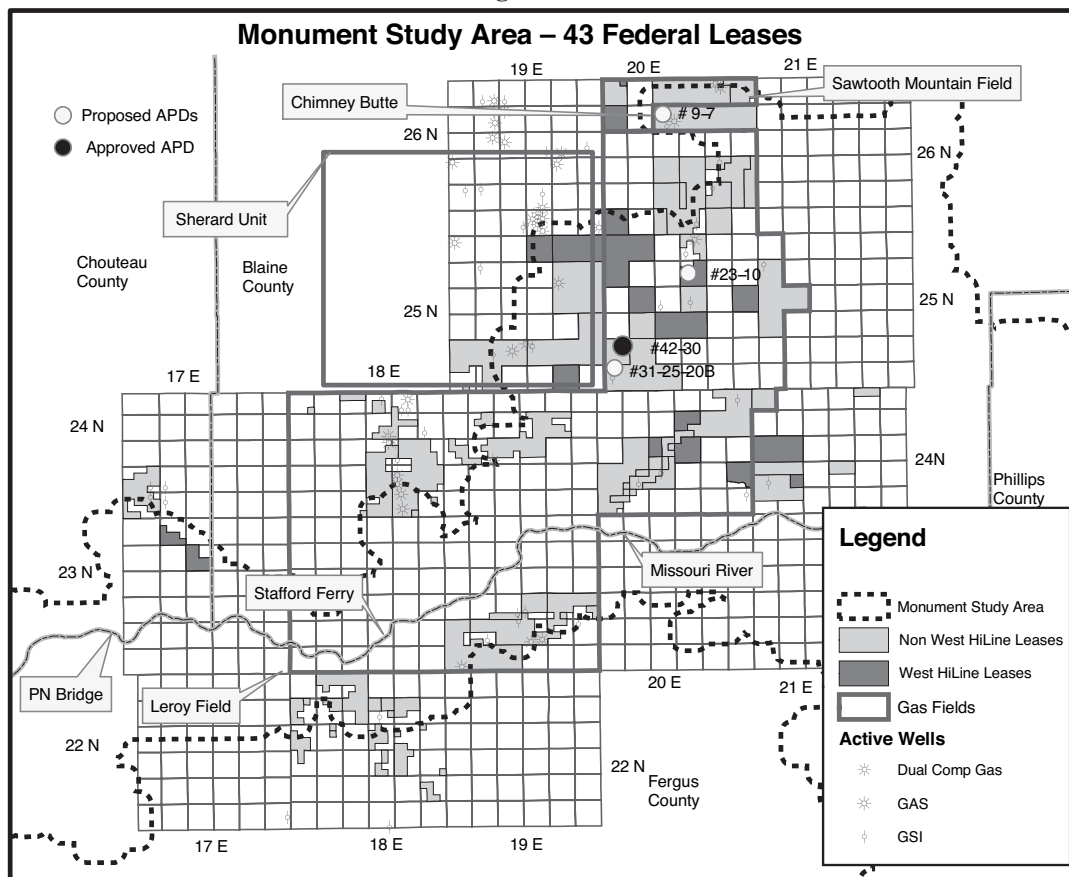


Figure K.3-2

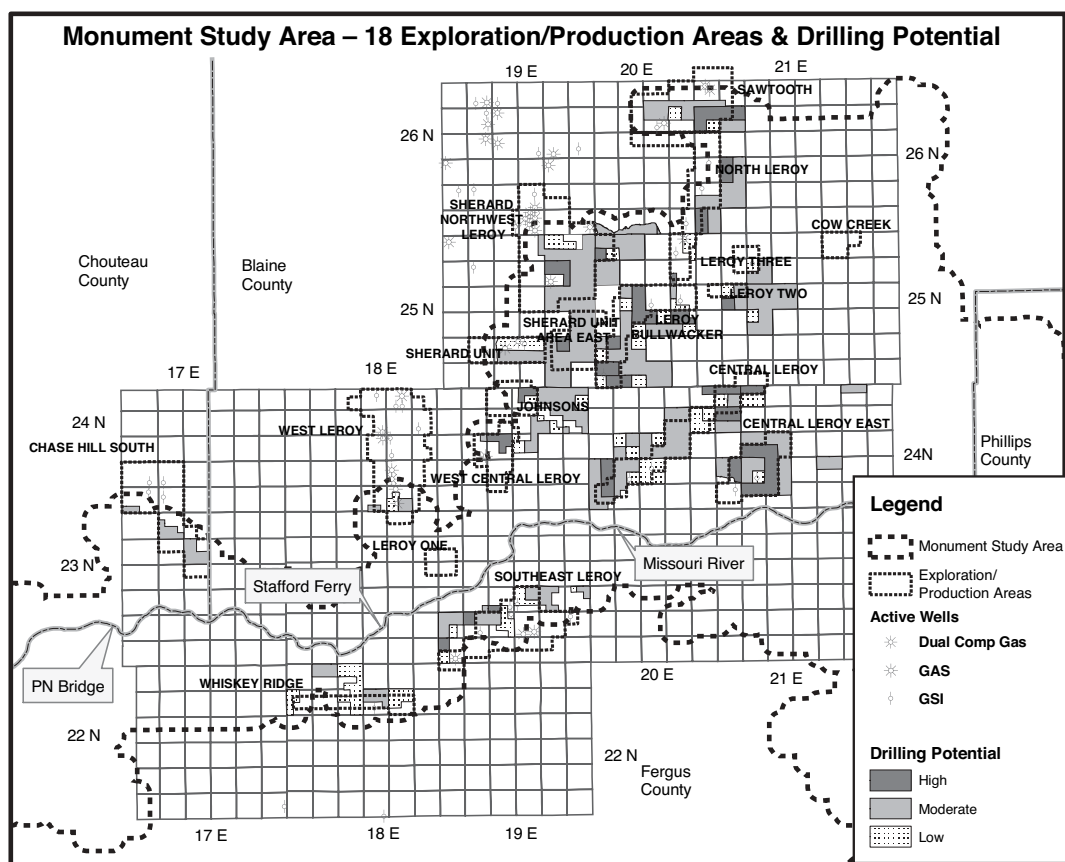


Table K.3-1 Reasonable Foreseeable Development (RFD) Wells by Exploration/Development Area			
<i>Exploration/Development Area</i>	<i>Monument Wells</i>	<i>Wells Within 1/2 Mile of the Monument</i>	<i>Total</i>
North Leroy	1	4	5
Central Leroy	6	0	6
Central Leroy East	3	0	3
Leroy Bullwhacker East	6	0	6
Sherard Northwest Leroy	8	7	15
West Leroy	0	1	1
South Sawtooth	4	13	17
Sherard Unit Area East	10	0	10
Southeast Leroy	1	1	2
Chase Hill	2	0	2
Sherard Unit	5	1	6
Total Wells in the 11 Areas	46	27	73

Possible Oil and Gas Operations in the Monument

Geophysical Exploration Methods

Geophysical exploration is a general term used for various indirect exploration methods, the most common being seismic and gravity surveys. Gravitational prospecting detects micro-variations in gravitational attraction caused by the differences in the density of various types of rock through the use of an instrument known as a gravimeter. Data derived from gravity surveys is used to generate anomaly maps, from which faults and general structural trends can be interpreted. Survey measurements are taken at many points along a linear path with a gravimeter. The gravimeter is transported either by backpack, helicopter, or off-road vehicle and data points are located with a Global Positioning System (GPS). Because gravity surveys can be conducted from the air or by a backpacker, surface disturbance is not necessary. However, surface disturbance may occur if off-road use is permitted for the purpose of conducting the survey.

Seismic surveys are the most popular indirect method currently utilized for locating subsurface structures which may contain oil and gas. Seismic prospecting is based on the fact that shock waves (waves similar to those created when a pebble is dropped into a pool of standing water) are reflected, refracted (bent) to varying degrees and travel at different speeds as they pass through different rock types. As the shock wave encounters layers where the lower rock unit causes the waves to travel slower, some of the wave (energy) is reflected upward to surface sensing devices called geophones.

The geophones are connected by ground wire to a data recording truck which stores data on magnetic tape. The time required for the waves to travel from the source of the wave down to a given reflecting rock unit and back to the geophone is related to the depth by multiplying the shock wave velocity by 1/2 the travel time. For different rock types the average velocity is determined from bore hole and core data or must be estimated if no data is available.

Seismic surveys are conducted by sending shock waves, generated by a small explosion or through mechanically beating the ground surface with a thumping or vibrating platform, through the earth's surface.

The thumper and vibrator methods pound or vibrate the ground surface to create a shock wave. Usually, four large trucks are used, each equipped with pads about 4 feet square. The pads are lowered to the ground and the vibrators are electronically triggered from the recording truck. Once information is recorded the trucks move forward a short distance and the process is repeated. Less than 50 square feet of surface area is required to operate the equipment at each recording site.

The small explosive method requires that charges be detonated on the surface or in a drill hole. Holes for the charges are drilled utilizing truck-mounted or portable air drills to bore small-diameter holes to depths of 100 to 200 feet. Generally, 4 to 12 holes are drilled per mile of line and a 50-pound charge of explosives is placed in the hole, covered, and detonated. The created shock wave is recorded by geophones placed in a linear fashion on the surface. In rugged topography, a portable drill carried in by helicopter is often used to drill the holes rather than a truck-mounted drill.

A typical seismic drilling operation may utilize 10 to 15 men operating 5 to 7 trucks. Under normal conditions, 3 to 5 miles of line can be surveyed each day using the explosive method. The vehicles used for a drilling program may include heavy truck-mounted drill rigs, track-mounted air rigs, water trucks, a computer recording truck, and several light pickups for the surveyors, shot hole crew, geophone crew, permit man, and party chief.

Public roads and existing private roads and trails are used where possible. However, off-road travel is also necessary in some cases. Graders and dozers may be required to provide access to remote areas. Several trips a day are made along a seismograph line; this usually establishes a well-defined two-track trail. Drilling water, when needed, is usually obtained from private landowners.

Terrain within the Monument is of the type which may not allow the use of thumpers or vibrotrucks. Therefore, geophysical exploration in the study area would likely be accomplished with the use of portable drills and set charges.

Geophysical Exploration Operations

Geophysical operations may be conducted regardless of whether the land is leased or not. An operator is required to file a Notice of Intent to Conduct Oil and Gas Exploration Operations with the appropriate BLM office for all geophysical activities on BLM land. The Notice of Intent should include maps showing the line location and access routes, any anticipated surface damages and a timeframe for operations. The operator must be bonded.

Notices of Staking, APDs, drilling activities and subsequent well operations can only be approved, subject to regulations, on leased lands. Seasonal restrictions may be imposed to reduce fire hazards, conflicts with wildlife, watershed damage, hunting activity, etc.

Written approval must be obtained from the authorized officer prior to commencing any surface blading activities and the operator must contact the BLM when operations begin. The operator is required to comply with written instructions and orders given by the authorized officer at the prework conference, site inspection (if required) and during field investigations. Periodic checks during and upon completion of the operation will be conducted to ensure compliance with the terms of the Notice of Intent.

Drilling Permit Process

The federal lessee or operating company selects a drill site based on spacing requirements, subsurface and surface geology, geophysics, topography, and economic considerations. Statewide spacing regulations are established by the Montana State Board of Oil and Gas Conservation.

Notice of Staking (NOS)

Once the company makes the decision to drill, it must decide whether to submit a Notice of Staking (NOS) or apply directly for a permit to drill. The NOS is an outline of what the company intends to do, including a location map and sketched site plan. The NOS is used to review any conflicts with known critical resource values. The BLM utilizes information contained in the NOS and obtained from the onsite inspection to develop conditions of approval to be incorporated into the APD. As a result of the federal Onshore Oil and Gas Leasing Reform Act of 1987 (Reform Act of 1987), upon receipt of an NOS the operator/company name, well name/number, well location and a map showing the drill site must be posted in a public place for a minimum of 30 days prior to approving the APD. Application for Permit to Drill (APD)

The operator may or may not choose to submit an NOS; in either case, an APD must be submitted. An APD consists of two main parts: the 13-point surface plan which describes any surface disturbances and is reviewed by resource specialists; and the 8-point plan which details the drilling program and is reviewed by the petroleum engineer and geologist. For the APD option, the onsite inspection is used to assess possible impacts and develop conditions of approval to minimize these impacts. If the NOS option is not utilized, the 30-day posting period, as required by the Reform Act of 1987, will commence upon receipt of the APD by the BLM.

For oil and gas activity involving surface-disturbing operations, an archaeological clearance is required. However, there may be exceptions to this policy on a case-by-case basis. Additionally, the BLM must prepare any site-specific environmental documentation required by NEPA and develop mitigation measures necessary to protect any adversely affected resources. The BLM approves all wells drilled on federal minerals regardless of surface ownership. For privately owned surfaces, it is the responsibility of the operator to obtain a surface owner agreement.

Drilling Phase

Once the APD is approved, the operator may begin construction activities. When a site is chosen that necessitates the construction of an access road, it is usually planned over the shortest feasible route and would attempt to avoid steep slopes. Environmental factors or a landowner's wishes may dictate a longer route in some cases.

During this first phase the operator moves construction equipment over existing roads to the point where the access road begins. Depending upon the type of terrain, equipment may include dozers (track-mounted and rubber-tired), scrapers and graders. Existing roads and trails often require improvement in places, and occasionally, culverts and

cattle guards are installed. Because of the topography and the shallow depth of wells (1,500 to 2,200 feet), they can be drilled using a truck-mounted rig. Thus, oftentimes very little or no access road work is necessary and this phase of construction requires very little time.

The second phase is the construction of the drilling pad or platform. Much of the study area has steep slopes and some dirt work is necessary to prepare a safe drill pad. In some cases, no disturbance is required other than a mud (reserve) pit. If surface disturbance is necessary, soil material suitable for plant growth is removed and stockpiled in a designated area to be used later for reclamation. Drilling sites on ridge tops and hillsides are constructed by cutting and filling portions of the location after the topsoil has been removed. The excess cut material is stockpiled in an area that would allow easy recovery for reclamation.

The amount of level surface required for safely assembling and operating a drilling rig varies with the type of rig, but is usually 200 by 250 feet for typical wells of 1,500 to 2,200 foot depths. Deeper wells may require larger pads because of the rig size and associated equipment. When construction of a drilling location requires cut and fill, the foundation of the drilling derrick is usually placed on a cut surface ensuring that it rests on solid ground, thereby preventing it from leaning or toppling due to settling of uncompacted soil.

In addition to the drilling platform, a reserve pit may be constructed to contain drilling fluids and drill hole cuttings. It is usually square or oblong, but is sometimes constructed in other shapes to accommodate topography. Generally, the reserve pit is 6 to 12 feet deep. Smaller reserve pits are used for air drilling, usually less than 10-by-10 feet and approximately 6 to 10 feet in depth. In some instances, steel tanks are utilized which eliminate the need for a pit.

Depending on how the drill site is located relative to a natural drainage, it may be necessary to construct water bars or diversions to control surface runoff and erosion. The area disturbed for construction and the potential for successful revegetation depends largely on topography, soil type, climate and the degree of disturbance.

Water for drilling is hauled or piped to the rig storage tanks or reserve pit from rivers, wells, reservoirs or private sources. Occasionally, water supply wells are drilled on or close to the drill site. Bentonite, a type of clay, is mixed with the water to form the main constituent of the drilling mud. A wide variety of other materials and chemicals may be added to enhance the mud properties. Drilling mud performs several important functions; it cools the bit, reduces the drag of the drill pipe on the sides of the bore hole, seals off any porous zones, aids in preventing an uncontrolled release of formation fluids, and carries the cuttings to the surface.

High-pressure air is sometimes used in place of mud. The use of mud or air is largely dependent upon the target formation, drilling depth and type of completion desired. The drilling mud or air is circulated through the drill pipe to the bottom of the hole, through the bit and up the well bore. At the surface the mud and rock cuttings are returned to the reserve pit where gravity separates the two or they are mechanically separated through a screen. The mud is recycled and returned to the system for further use. When drilling with air the cuttings are blown into another pit called the blooie pit, where compressed air and cuttings leave the drill system. By regulation, this pit or discharge point is to be located no closer than 100 feet to the well bore. Drilling muds are not allowed to contain any hazardous or toxic substances.

The actual commencement of the drilling is referred to as "spudding in." Initially, the drilling usually proceeds rapidly due to the unconsolidated nature of shallow formations.

Drilling is accomplished by rotating special bits bearing a controlled portion of the drill string weight. The rig structure and associated hoisting equipment bear the remainder of the drill string's weight. The weight on the bit is controlled to maintain as vertical a hole as possible or deviate from vertical when desired, and to prevent rapid wearing of the drill bit.

The combination of rotary motion, hydraulic jet action of mud through the bit and weight on the bit causes rock to be chipped away at the bottom of the hole. As mentioned earlier, these chips are then transported to the surface via the mud or compressed air where they are disposed of into the reserve pit or blooie pit.

The rotary motion is either created by a square or hexagonal rod, called a kelly, which fits through a square or hexagonal hole in a large turntable, called a rotary table, or a top drive hydraulic unit that turns the drill pipe. The rotary table sits on the drilling rig floor and as the hole is deepened the kelly descends. When the kelly has gone as deep as it can, it is raised and a piece of drill pipe about 30 feet in length is attached to the drill pipe in the hole. The drill pipe is then lowered, the kelly is raised and attached to the top of it, and drilling recommences. By adding more and more drill pipe the hole is steadily deepened.

Eventually, the bit becomes worn and must be replaced. To change bits, the entire string of drill pipe must be pulled from the hole. Once the bit is replaced the drill string is reassembled, lowered into the hole and drilling is started again.

Drilling operations are continuous, 24 hours a day, 7 days a week. The crews usually work three 8-hour shifts or two 12-hour shifts a day. Typical wells in the area require 3 to

4 days to reach total depth. At periodic intervals, BLM personnel, usually petroleum engineering technicians, will conduct inspections of the drilling rig and operations to ensure compliance with regulations and the approved plans in the APD. If at any time the operator wishes to change the approved plans in the APD, verbal approval may be obtained, but must be followed up in writing.

Upon completion of drilling, the well is tested to determine its capability to produce hydrocarbons (oil and gas). If oil or gas is found in commercial quantities the well is completed as a producer. Typically, gas wells in this region are “sweet gas” wells, that is, they contain no hydrogen sulfide gas. Sweet gas production requires a meter house and a gathering line or marketing line to transport the gas. In some cases a compressor station is required to compress the gas to a pressure necessary for entry into a pipeline.

If liquid hydrocarbons (condensates) are produced with the gas, a separator and storage facility are necessary. Gas wells which produce water require a small water disposal pit. The pit generally fits within the boundaries of the drilling pad.

Installation of production facilities generally requires little additional surface disturbance beyond that necessary for drilling; however, additional disturbance does result from pipeline and gathering line installations. Gas meter houses are usually 10-by-10 feet, skid-mounted steel sheds. Pumpjacks are sometimes used if water produced with the gas and the gas reservoir pressure declines to a level that is not adequate to overcome the hydrostatic pressure created by a column of water. Pumpjacks are usually 8 to 10 feet in height, require a slightly larger surface area than a gas shack, and may or may not be skid mounted. The gas house and pumpjack are usually situated over the well head on the same area where the drill rig was set up. After the production facilities are installed the remaining drilling disturbances are reclaimed.

During the production phase, the BLM monitors compliance with regulations and approves field activities needed for well and field operations. Many operations, such as plugging, completion in a different zone, deepening, etc., require prior approval. Others, such as acidizing and fracturing, do not require prior approval, but a subsequent report describing the operation in detail must be filed.

Past, Present and Future Oil and Gas Exploration and Development Activity

Until the 1960s and 1970s, drilling and exploration activity was relatively low within the study area. Although gas was known to exist, it was not a primary objective or target while industry was in search of oil, due to gas prices as low as 10¢/MCF and lack of pipeline infrastructure. With rising gas

prices and more infrastructure available, the economic incentive exists to further explore and develop natural gas resources. The study area contains federal, state, and private leases that have a reasonable chance of being further developed for oil and gas (specifically gas, because oil has not been discovered in the Monument).

Geophysical and Chemical Surveys

Oil and gas can be discovered by either direct or indirect exploration methods. Direct exploration methods such as the mapping of rock outcrops and oil seeps, drill core analyses and drilling may lead to the discovery of oil and gas deposits, whereas indirect methods such as seismic and gravity surveys are used to delineate subsurface features which may contain oil and gas. Continued exploration for oil and gas accumulations in the study area and adjacent areas resulted from knowledge gained from surface geology, combined with well information on wells drilled in the region. Not until the late 1970s-early 1980s had seismic technology been used to gain a better understanding of the area’s subsurface geologic structure. Further improvements in seismic technology and data collection processes continue to enhance the understanding of the area’s subsurface geology.

Exploratory/Development Drilling

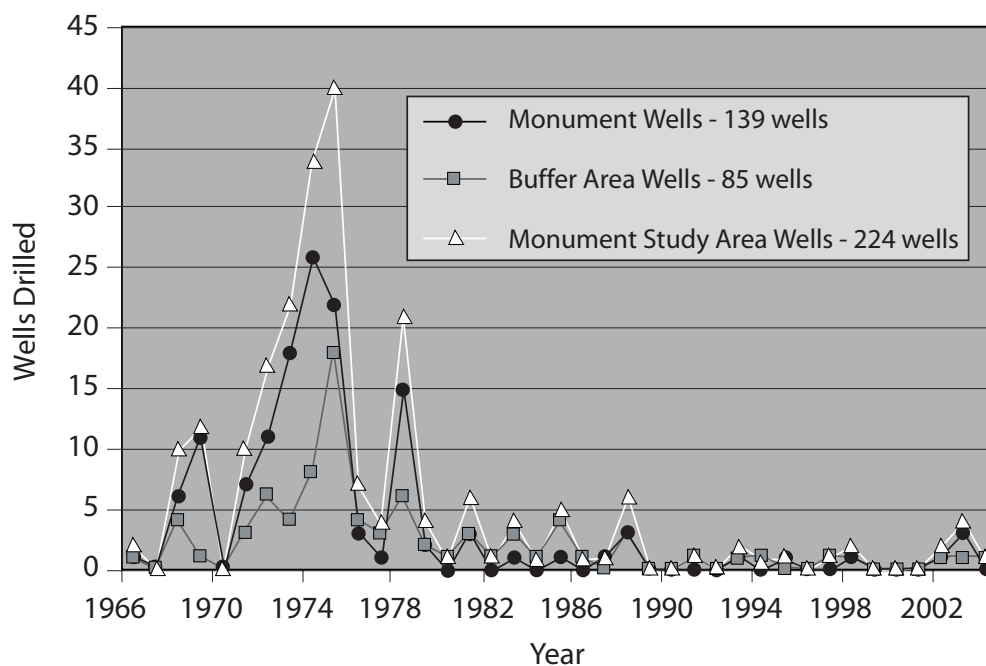
The following is a discussion of historic drilling activities in the study area. The narrative also discusses the potential of specific areas for future drilling and the potential for oil and gas to occur. The areas identified under this narrative are based on well information (drilling and electric logs), reservoir data, industry’s geologic interpretation, historical production data, and information provided by industry indicating plans to explore and develop natural gas in the Monument and adjacent areas.

The majority of the oil and gas exploration and development activities in the region surrounding the study area (namely 35 townships covered by T21-27N; R17-21E) occurred prior to the Monument. Oil and gas activity in the region began in 1917 (the date the first well was drilled). A total of 869 wells were drilled within these 35 townships prior to the Monument.

A total of 139 wells have been drilled in the Monument with an additional 85 wells (224 wells total) drilled outside the Monument but within 1/2 mile. Some activity falls outside of the study area because of a federal lease, federal Communitization Agreement, or federal unit. The majority of the historic drilling in the study area occurred in the 1970s and 1980s following trends with respect to natural gas pricing and infrastructure (Figure K.3-3). A total of 15 wells have tested/produced commercial quantities of gas for a success rate of 10.8% in the Monument. The overall success rate increases to 18% when wells within the study

Figure K.3-3

Drilling History in the Monument Study Area



area are added, or 40 out of 224 wells. The success rates have improved in more recent years as knowledge of the area improves. Using the previous 20 years of drilling history, the overall success rate improves from 18% to 35%.

Table K.3-2 shows historical natural gas exploration and development in the Monument.

New Field and Reservoir Discoveries

Outside of the Judith River, Eagle and Carlile Formations within the study area there is limited chance for new fields and reservoir discoveries because of the historical drilling patterns. It is not known if operators of the federal leases will perform exploratory drilling into deeper horizons prior

Table K.3-2
Historical Natural Gas Exploration and Development in the Monument

<i>Natural Gas Wells</i>	<i>Leroy Gas Field</i>	<i>Sawtooth Mountain Gas Field</i>	<i>Sherard Unit Area</i>	<i>Outside of Existing Fields</i>	<i>Total</i>
Drilled	42	2	12	83	139
Dry Holes (Abandoned)	29	2	9	82	122
Completed	13	0	3	1	17
Production	12	0	3	0	15
Shut-In without Pipeline	1	0	0	1	2
Completed Wells Plugged	5	0	0	0	5
Completed Wells Active	8	0	3	1	12
Production (BCF)	2.2	0	3.9	0	6.1

to the expiration of the leases. Once a lease expires no further oil or gas activity will occur. Other than the above-mentioned formations, no other zones have found oil or gas in the vicinity of the study area.

Exploration of the region began in the early 1920s in the Sherard and Winifred areas. The first well in the study area was drilled in the Whiskey Ridge area. This area is considered the southernmost exploration area common to the Monument and lies approximately three miles south and west of the McClelland/Stafford Ferry. The Mauland No. 2 well was the Monument area's first exploration well drilled in October 1939 by E & M Oil and Gas Company at a location in the SESE of Section 4, T22N R18E, Fergus County. The well was drilled to a total depth of 635 feet and reached the Eagle Sandstone at 424 feet. The well was drilled as a dry hole and subsequently plugged and abandoned.

The discovery well for the Leroy Gas Field (the first commercially productive well in the Monument) was drilled about a mile north of the Missouri River and approximately 3 miles downstream of the McClelland/Stafford Ferry (Leroy One Exploration/Development Area). The Bearpaw Federal No. 1-18 well was spud in October 1968 by El Santo Petroleum Corp. & Royal Crest Oil Corp. at a location in the NWNWNW of Section 18, T23N R19E, Blaine County. The well was completed in November 1968 as a producing gas well and later produced 455,420 MCF of natural gas between December 1980 and May 1991 before it was plugged and abandoned (June 1, 1996) as a depleted producer. Note that the well was idle (shut-in) for nearly 12 years before pipeline infrastructure was introduced to the area in 1980. Although this well was considered the first commercially productive well in the Monument, two other successful wells were drilled in the Monument prior to the above-referenced well but were never produced.

Past and Present Oil and Gas Development Activity and Comparisons to Development Activity Located Outside the Monument

The study area currently includes 43 federal oil and gas leases (42,805 acres) and 3 state oil and gas leases (1,918 acres). The majority of the federal leases are located partially outside the Monument and can occur in a non-contiguous manner. Private land (surface and mineral ownership) in the area may also include oil and gas leases. The majority of the leased federal lands are in Blaine County (92% north of the river) and the remainder are located in Fergus and Chouteau Counties (5% and 3% respectively). None of the existing federal leases in the Monument are in Phillips County.

A lease in the Monument may also be part of a Communitization Agreement (CA) and/or Unit Agree-

ment. The agreements provide for an administrative method to develop the gas resources and allow a fair and equitable allocation of well production back to specific leases tied to the agreements, based on acreage within the agreements. The CAs are necessary to protect the various mineral interests (federal, state and private) involved in spacing units where normally only one well is allowed. Currently, 11 CAs are within or both in and outside the Monument. Another 10 CAs lie outside of the Monument, yet are common to the Monument because a portion of the lease is common to both the CA and the Monument. The CAs are formed based on standard state spacing requirements for gas wells (1 well per 640 acres, statewide well spacing) and state-approved Board of Oil and Gas Conservation orders allowing reduced spacing or allowing 1 well per 320 acres (State Board Order Nos. 19-75 and 31-87) to sufficiently develop the gas resource.

In addition to leases contained in the mentioned CAs, 2 federal leases are also located in a unit within the Monument known as the Sherard Eagle Participating Area (PA) "E." PA "E" of the Sherard Unit was formed after discovering a geologic feature in Sections 27 and 28 of T25N R19E, Blaine County by drilling the U.S. No. 6-28 well in late 1974. The 1,280-acre PA currently contains 3 active wells in the Monument producing from the Eagle Formation.

Leroy Gas Field

The majority of the federal leases lie within the Leroy Gas Field. The field was discovered in November 1968 by the Federal 1-18 well drilled by El Santo Petroleum Corp in the NWNWNW of Section 18, T23N R19E (within the Monument).

Following the well which led to the discovery of the Leroy Gas Field in 1968, 41 additional wells were drilled in the Monument. Twenty-nine were abandoned as dry holes. Thirteen were completed (12 to production and one shut in without a pipeline). Of these 13, five were eventually plugged (including the discovery well); leaving eight active wells in the Monument. These wells produced 2.2 BCF. Per State Board Order Nos. 19-75 and 31-87, the Leroy Gas Field is allowed to be developed on 320-acre spacing units for the Judith River and Eagle/Virgelle Formations with each unit consisting of half sections lying in a north-south or east-west direction.

There are also 16 wells outside the Monument but within 1/2 mile that drain from the Leroy Gas Field. These wells have produced 2.5 BCF. Another 11 wells, outside the Monument and further than 1/2 mile also are within the Leroy Gas Field and produced 5.1 BCF. Of these 11 wells, four have been plugged.

Sawtooth Mountain Gas Field

The Sawtooth Mountain Gas Field lies at the very northern edge of the Monument's east section. It is common to the Monument because two federal leases overlap the Monument and the Sawtooth Mountain Gas Field. Currently, no active Monument wells are within the Sawtooth Mountain Gas Field leases; however, two wells lie within 1/2 mile of the Monument and are contained in a lease and CA both in and outside the Monument. The wells were drilled in the mid-1970s and continue to produce. Geologic characteristics of the Sawtooth Mountain Gas Field are similar to those of the Leroy Gas Field as they are adjacent to one another near the northern edge of the Monument.

Sherard Unit Area

Six of the leases in the Monument fall within the Sherard Unit Area. The first successful well in this area was drilled in December 1974 and continues to produce. Geologic characteristics of the Sherard Unit Area are similar in nature to those of the Leroy Gas field as a relatively short distance separates the two fields.

The Sherard Unit Area allows for one well per section with numerous well density and location exceptions. Because the area is so broken with fault blocks, there is a need to drill additional wells. For example, if one section of land contains 10 individual fault blocks, it is highly likely that the BLM and the Montana Board of Oil and Gas Conservation would be petitioned by industry to allow wells to be drilled into each discrete fault block in order to produce the entire section of land.

Three wells are currently active in the Monument and have produced 3.9 BCF. Another four wells are outside the Monument but within 1/2 mile and have produced 1.7 BCF.

Wells Outside Field Boundaries

In addition to the wells discussed above, one additional well lies in the Monument to the east of the Leroy Gas Field and is currently shut in, waiting on a pipeline.

Table K.3-3 shows current natural gas activity in the Monument.

Exploration and Development Areas

Each of the fields includes productive areas referred to as exploration and development areas. Eighteen exploration and productive areas within the study area are used to describe historic, current and future exploration and development. In two of the areas (Cow Creek and Leroy One), no federal leases exist and will not under the Proclamation. They are included for historical purposes to indicate the trend of oil and gas exploration and development of the area. The 18 areas are common to and mostly contained within the Monument; however, some of the areas are both in and outside the Monument (Figure K.3-4). In addition to the wells drilled within the exploration/development areas, numerous other exploratory wells were drilled and abandoned outside of these areas because the wells had no shows of natural gas. Valuable information was gained from the abandoned wells because they further identified the subsurface resource.

The potential for future drilling has been rated from low to high (Figure K.3-2). The criteria were based on whether another well could be drilled in an already productive spacing unit, or whether the spacing unit had a dry hole drilled previous to this report. The spacing units without wells drilled and adjacent to productive areas received a high potential for drilling. The spacing units with either a dry hole or a productive well received a low potential for drilling another well. Due to the complex structural geology and the possibility of drilling a producing gas well within several acres of dry holes, exceptions could occur in the low potential drilling areas. All other areas were given a moderate potential for drilling another well.

Of the 18 exploration and development areas it is reasonably foreseeable that 73 natural gas wells could be drilled in 11 of the areas (Map 2, Side B). Table K.3-1 shows the number of RFD wells for each exploration and development area. However, this is prior to considering any resource stipulations or conditions of approval, which is addressed in Chapter 4.

Table K.3-3
Current Natural Gas Activity in the Monument

<i>Natural Gas Wells</i>	<i>Leroy Gas Field</i>	<i>Sawtooth Mountain Gas Field</i>	<i>Sherard Unit Area</i>	<i>Outside of Existing Fields</i>	<i>Total</i>
Active Wells	8	0	3	1	12
Currently Producing	2	0	2	0	4
Shut-In with Pipeline	5	0	1	0	6
Shut-In without Pipeline	1	0	0	1	2

Figure K.3-4

